

Raymond R. Wile
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United States. Patent Office.

Interference

Leon F. Douglass

versus

Thomas H. McDonald, Assignor
to The American Graphophone
Company.

) Interference No. 20,090
)
)
) Subject:
) Talking Machines
)
)
)

TESTIMONY ON BEHALF OF LEON F. DOUGLASS, 1899 - 1900.

Electrostatic copies
of document introduced
into the case of American
Graphophone Co. vs.
Leon F. Douglass (U. S.
Circuit Court, Northern
District of Illinois. No.
25,199)
Case file located at Archives
Section - FRC Chicago, Ill.
(RG 21)

25,174

IN THE
UNITED STATES PATENT OFFICE.
INTERFERENCE.

LEON F. DOUGLASS	}	Interference No. 20,090.
<i>vs.</i>		Subject:
THOMAS H. McDONALD, ASSIGNOR TO THE AMERICAN GRAPHO- PHONE CO.		TALKING MACHINES.

Preliminary Statement of Leon F. Douglass.

Leon F. Douglass, being first duly sworn, deposes and says that he is one of the contestants in the above entitled interference declared by the Commissioner of Patents, July 1, 1899, between Leon F. Douglass' application for letters patent, filed February 4, 1899, Serial No. 704,508, and the application of Thomas H. McDonald, for talking machines; that he first conceived, explained to others and reduced to practice the invention described and claimed in his said application, and set forth in the declaration of interference, as follows:

"The method of forming a sound record which consists in placing a vibratory cutting style in contact with a tablet, causing said style to vibrate in a plane approximately perpendicular to the surface of the tablet by impressing sonorous vibrations thereon, and simultaneously moving said tablet at such a speed that sounds requiring one minute in their production form a record approximately forty-four meters in length,"

in the winter of 1888 and 1889; that at this time said invention was so reduced to practice by him by forming a sound record on a cylindrical sound record blank of a wax-like composition of about six inches in diameter by rotating the same at a surface speed of



from 150 to 200 feet per minute while the sound record was being cut or engraved on the surface of said cylinder by a vibratory cutting style connected with a diaphragm and actuated by sound waves, said cutting style vibrating in a plane approximately perpendicular to the surface of said cylindrical wax-like tablet; and that after said sound record was thus formed the sound recorded thereon was successfully reproduced therefrom by rotating the sound record cylinder at the same surface speed of from 150 to 200 feet per minute, and causing the same to actuate a reproducing style and diaphragm; that subsequent to this date affiant has at various times explained his said invention to different persons; and has at various times formed sound records by his said method or process above set forth, for the purpose of demonstrating the utility and practicability of his said invention to such persons; and has also successfully reproduced the sounds from the sound records thus formed by causing the sound record cylinder to rotate at a surface speed of approximately forty-four meters per minute, and actuating a reproducing style and diaphragm. For example, affiant made such demonstration of his said invention in the presence of others in the latter part of the month of September, 1893. And again in the spring of 1894; and again in November, 1896. And affiant has explained his said invention without making demonstration to other persons at various times.

Affiant further states that owing to the fact that the American Graphophone Company, the other contestant herein who owns the application of contestant Macdonald, has always represented to affiant through its officers and agents, that it owns absolutely the patented rights on the successful talking machine, and the successful or wax-like cylindrical blank and sound record used in said machines, and that no one has a right to make such sound records, blanks and talking machines except itself and its licensees, affiant has never been in a position himself to manufacture or use his said invention, or put it on public sale. That although affiant is a licensee of the American Graphophone Company himself, that his said license relates merely to the reproduction of sound records by what is known as the duplicating process, which would not permit affiant without attacking the validity or scope of the American Graphophone Company's patents to practice his invention here in controversy and in interference, in a public or commercial way. But affiant has carefully preserved the recollection of his said improvement, and has been careful to put it in the knowledge of many other persons, confidentially, so that the invention should not be lost, and so that his rights might be preserved under it, until such

time as he would be at liberty to put the same into use commercially after the expiration of the American Graphophone Company's patents.

Affiant further states that he has never abandoned his said invention, or put the same into public use, and that he has never made a drawing or model.

(Signed) LEON F. DOUGLASS.

Subscribed and sworn to before me in the City of Chicago, this 7th day of July, A. D. 1899.

[SEAL.]

H. M. MUNDAY,
Notary Public.

Testimony in chief on behalf of Douglass.

NOTICE.

CHICAGO, Illinois, November 27th, 1899.

In the matter of the interference between the application of Leon F. Douglass for a talking machine and the application of Thomas H. Macdonald for a talking machine. Interference No. 20090, now pending before the Commissioner of Patents.

To Thomas H. Macdonald, Esq., and American Graphophone Company, his assignee, and Philip Mauro, Esq., his and its attorney, 620 F Street, Washington, D. C.:

DEAR SIR: Confirming our verbal notice given to Mr. Mauro, on Saturday, November 25th, in New York, we hereby notify you that on Monday, December 4th, 1899, at ten A. M., at our offices, suite No. 906, Marquette Building, No. 204 Dearborn street, Chicago, Illinois, before a notary public, or other competent officer, we shall proceed on behalf of contestant Douglass to take the testimony of Leon F. Douglass, Henry B. Babson, Charles Dickinson and Silas F. Leachman, all of Chicago, Illinois; of W. R. King and J. C. Houck, of Grand Island, Nebraska, and of Edward H. Amet, of Waukegan, Illinois, and others.

You are hereby further notified to be ready to produce at the examination of Leon F. Douglass, as a witness under this notice, all letters, reports and documents in your possession, or in the possession of E. D. Easton, Thomas H. Macdonald, or the American

Graphophone Company, which are signed by said Leon F. Douglass, and which have been sent by him to you or to either of you, or to said E. D. Easton, between the dates of July 1st, 1897, and the date of the declaration of this interference. And you are particularly notified to so produce letters of Leon F. Douglass, dated as follows: August 4, 1897; December 1, 1897; December 11, 1897; December 16, 1897; December 22, 1897; January 22, 1898; February 8, 1898; February 17, 1898; February 21, 1898; February 26, 1898; February 27, 1898; March 14, 1898; March 23, 1898; March 26, 1898; April 2, 1898; April 5, 1898; April 21, 1898; April 30, 1898; June 1, 1898; June 7, 1898; June 9, 1898; June 16, 1898; June 22, 1898; July 2, 1898; August 2, 1898; November 2, 1898; November 5, 1898; November 9, 1898; November 12, 1898; November 16, 1898.

You are further notified that in case you shall fail to produce said letters, papers, documents or telegrams on demand, we shall proceed to take secondary evidence concerning the contents of the same.

We expect to be able to have the witnesses Houck and King come from Grand Island to Chicago, to give their depositions. But in the event that they shall not come to Chicago for this purpose, their depositions will be taken at Grand Island, Nebraska, at a date of which short notice will be given you here in Chicago.

The testimony will continue from day to day until completed. You are invited to attend and cross-examine.

Very respectfully,

MUNDAY, EVARTS & ADCOCK,
Attorneys for Douglass.

Service of the above notice by copy accepted this day of
November, A. D. 1899.

PHILIP MAURO,
Attorney for Macdonald.

Before the Commissioner of Patents, in the matter of the interference between the application of Leon F. Douglass and the application of Thomas H. Macdonald for a talking machine, Interference No. 20,090.

Depositions of witnesses examined on behalf of contestant Douglass, pursuant to the annexed notice, at the offices of Munday, Evarts and Adcock, Suite No. 906, Marquette building, Chicago, Illinois.

Present Mr. Philip Mauro, on behalf of contestant Macdonald and Mr. John W. Munday on behalf of contestant Douglass.

And thereupon Mr. SILAS F. LEACHMAN, a witness on behalf of Leon F. Douglass was produced and being first duly sworn, testifies as follows:

Q. 1. What is your name, age, residence and occupation?

A. Age, thirty-nine; occupation, loader of musical records; residence, Chicago, Cook County, Illinois; my name, Silas F. Leachman.

Q. 2. You say you are a loader of musical records; I wish you would explain for the benefit of the court, exactly what that means? A. I load on wax cylinders, popular songs, known as records—musical records.

Q. 3. You mean that you sing with your own voice these popular selections and songs to the phonograph, that the sounds so made by you are recorded on wax tablets; is that right? A. I load band records, and sing and record my voice upon both graphophone and phonograph records.

Q. 4. Do you know an invention or improvement in the art of talking machines which is sometimes called the Graphophone Grand or the Concert Phonograph, in the use of which the sounds are recorded at a higher speed than is usual, and which reproduces these sounds with a much greater volume, loudness and better quality of tone than the ordinary machine? A. I have loaded lots of records upon both the phonograph and the graphophone grand.

Q. 5. When did you first learn of this invention, and from whom? A. Do you mean of the large cylinder? My first experience in the loudness of the records, that is the result gained nearly the same, was about October, possibly the latter part of September, 1893.

Q. 6. You may state what you did, or what you learned at that time and how you learned it? A. I moved out of my old residence I think in November, 1893, possible December. Mr. Douglass brought out to my house a graphophone and two different sized cylinders, one about one inch and a quarter or thereabout, and the other about two inches and nearly a quarter. The two inch and a quarter cylinder being the regulation size of both phonograph and graphophone blanks. The smaller cylinder, if I remember right, had a pasteboard inner tube, or that the inside was pasteboard. The outside of the cylinder seemed to be the same as the ordinary phonograph blank. I loaded both of these records at the uniform speed of 120 revolutions per minute, used the same power in loading both, and after completing the loading of both records,

we listened to them and tested them out. Mr. Douglass called my attention to the difference in the volume of the larger record which was nearly double the size of the smaller record. Mr. Douglass remarking, the first time my attention had ever been called to the fact, that it was owing to the size of the cylinder being much larger and thereby, being larger, although the machine was running at the same speed of 120, the larger cylinder was, the outer surface was running much faster than the small one. Mr. Douglass put on another blank and speeded the machine, the same sized blank, about two and a quarter inches, the regular stock blank, to about twice the speed of the first experiment, at least I should say that because on the first record I got two verses and two choruses and on the second record I only got a verse and a chorus. The blank of all three experiments was loaded with the Shamrock of Ireland, Emmett's waltz song. After loading this at double the speed, Mr. Douglass called my attention to the fact that it was nearly, if not twice as loud, and resisted overtones to a considerable extent and the cut was twice as severe. All of these records were loaded on an old-fashioned graphophone where you pulled the ends out and set the mandril in.

Q. 5. If I understand you correctly at this time in 1893 at your house you and Mr. Douglass at his instance, tried three experiments as follows: You loaded the Shamrock of Old Ireland upon a tablet about an inch and a quarter in diameter and put two verses and two choruses on the blank, the machine—an old fashioned graphophone—running at a speed of 120 revolutions per minute; you also on the same machine, at the same speed of the machine, loaded a tablet two inches and a quarter or thereabouts in diameter, the same being the ordinary stock blank, with the same two verses and two choruses of the same song; you then tested these two records by causing them to reproduce the sounds recorded thereon in the same machine, and found that the larger blank gave a result of twice as loud or thereabouts as the smaller blank. You then took a blank of the larger kind and put it in the same machine and speeded the machine up to double its former speed, or to 240 revolutions per minute, and loaded the blank with as much of the same song as you could put on it, which was one verse and one chorus; you then tested this blank in the same machine for reproduction and found that it gave a result twice as loud and of better quality than the same sized blank whereon the same song had been recorded at a speed of 120 revolutions. Have I stated the experiment correctly?

(Objected to by counsel for Macdonald as leading.)

A. I wish it understood that the larger of these two blanks were the regulation stock blanks, and also that the speed of this blank I estimate to be 240 revolutions because on the other one, the first larger one loaded, I got two verses and two choruses, and on the second one I got a verse and a chorus.

Q. 6. Did Mr. Douglass say any thing to you about how this invention could be made use of, or this fact could be utilized? A. Not at this time.

Q. 7. What did he say at this time to you? A. That the cylinder revolving so fast gave more resistance to the voice. I don't remember that he said any more. In other words you could sing with more force, load it, you didn't have to be so careful in loading it.

Q. 8. When did you next hear anything concerning this discovery that the speed of the surface of the tablet produced such remarkable effect upon the loudness and quality of the record when reproduced? A. Some time in the fall following. I am positive I moved out where the first test was made in November. The fall following Mr. Douglass brought me these little flat disk records, about the size of a saucer. I loaded them for Mr. Douglass. I think he brought out a half a dozen at a time. They were about five inches in diameter, and the machine that he fixed for loading them was an attachment on a graphophone. After loading them Mr. Douglass and myself listened to them, and he called my attention to the fact that as the reproduction went to the outside of the disk the tone increased in volume. Mr. Douglass at that time remarked that if we had a larger cylinder we could get a better effect, and attributed the fact of the increase of the sound to the fact that the outer edge was revolving much faster than the inner.

Q. When he said to you at this time that if he had a larger cylinder he could get a better effect, what did you understand him to mean, to refer to? A. His explanation to me was as the reproduction went out that the speed was gradually increasing, and the farther it went out the louder the tone, more distinct. He said that was attributed to the fact that as it went to the outer edges the speed had vastly increased. I would like to say, however, that the machine that Mr. Douglass brought out to my house only gave us good results, as it was just put together for experimental purposes.

Q. 10. When did you next hear or learn concerning this subject? A. Some time about a year later, or several months later; I don't remember just the exact time. It was in the following summer, in hot weather, in the summer of 1895. It was in very

warm weather, because I complained about the cylinder slipping off the mandril. And Mr. Douglass told me that there was a key on the end; I had never handled this kind of a machine before nor since. Mr. Douglass sent out a dozen blanks pared and wrapped in cotton to my house. That was what was known as the business graphophone machine blanks. The blanks were much longer, I should say about two inches. He told me to speed up the machine and try and load a song on it, getting two verses and two choruses. I speeded the machine up, loaded the records. I want to state that the paring of all the blanks he sent out were miserable; they were pared in ridges, bad pared. I loaded him up two records and took them down to him. The result on high speed was nearly double the result obtained on small cylinders. I would like to state here that these business blanks appeared to me to be much larger in diameter than the ordinary blanks, thicker. I took the blanks down to Mr. Douglass. We tested them out, and I stated to Mr. Douglass that a better result could have been gotten out of them, as the condition of the blank was bad, and Mr. Douglass said to me that the thing to do would be to increase the size of the blank to double the size of that blank and cut the speed down to ordinary 120. I mean by "size" the diameter.

Q. 11. Did you mean to say in your answer that the result of this experiment was bad. Or that the blanks were not pared properly? A. I mean that the result I got speeding this blank up to double the speed was marvelous. Nearly double the tone of the ordinary way of loading it. However, I took the other blanks back because the other blanks was so miserably pared that I didn't fool further with them.

Q. 12. Referring back now to the experiment in 1893, when you first heard of this subject: Did Mr. Douglass at that time explain to you why the better results were produced? Why the faster speed made a louder record and better one? A. Mr. Douglass explained to me that the speed of the machine going much faster allowed the vibrations to spread and to have more resistance to the power of the voice and sound. I would like to state my experience in that particular; I can take the cylinder at 120 ordinary stock phonograph blank, and I have got to be careful that I don't over-tone or cause what they call a "blasty" record. I can take the same record and running it at double the speed and use considerable more power in loading the blank without so much fear of blasting. And on the speed of the machine the cut appears twice as severe at high speed than at low speed.

Q. 13. At the time of these 1893 experiments would a

sound record containing one verse and one chorus of a song have been a commercially salable article on the market? A. There were a number of songs that you couldn't get over one verse and a chorus on, yet there were a majority of songs at 120 you could get two verses and two choruses on.

Q. 14. Would a record with one verse and one chorus of the Shamrock of Old Ireland have contained sufficient matter to be commercially salable at that time as records were made? A. No, sir, they would not. I would state that in this third experiment that I stated to Mr. Douglass that the machine running at 240 revolutions a minute did not allow enough matter to be put on the record to make it a salable article. Mr. Douglass said that we would offset that by doubling the size of the record in diameter and cut it down to the original speed of 120. I mean by this third experiment that one when I had this business graphophone machine out at my house.

Q. 15. How are you able to fix the date of the first demonstration or experiment as being in 1893? A. I built a home out next to where I was living, and moved about November, 1893, and Mr. Douglass came out on a Sunday morning, either a week or two or three weeks, I won't be positive, previous to my moving. The experiment was in the old house.

Q. 16. How do you fix the date of the second matter about which you have testified — I mean the date of the disk experiment? A. About the time Mr. Douglass brought the disk out to my house my work-room set off from the main body of the house, that is, run the length of two rooms on the side, and it was in the fall of the year, because I had just set up one of these little, small, sheet-iron stoves, and had not set it going. I set the little stove in the room, but hadn't connected it up.

Q. 17. How do you fix the date of the third experiment, which you say was with a business graphophone — I suppose you mean what was known as the commercial machine — how do you fix that date? A. I fix it during the hot months of the year in the following summer, but I can't be positive as to the month.

Cross-Examination by Mr. Mauro.

C. Q. 1. How long, Mr. Leachman, have you followed your occupation of loading sound records? A. Continuously since 1892.

C. Q. 2. Have you carried on this business for yourself, or for other persons; and if so, for whom? A. Mr. Douglass, excepting the period when Mr. Douglass was over with the graphophone company.

C. Q. 3. What period was that? A. When Mr. Douglass was employed by Mr. Easton; I don't remember the time. I would like to state, I mean by working for Mr. Douglass — I mean that I worked for the various companies with which he was connected. And I have loaded some records for outside parties.

C. Q. 4. And since 1892, with the exception of a period that you are not able to locate, you have been working continuously for Mr. Douglass, or for companies with which he was connected. Is that right? A. I mean that I was working for Mr. Douglass for the companies with which he was connected.

C. Q. 5. During that time I suppose you made a great many thousand sound records? A. I think I made more than anybody that ever sung into a phonograph.

C. Q. 6. How long have you been acquainted with Mr. Leon F. Douglass, who is here present? A. Since 1892.

C. Q. 7. And have you seen him frequently during the period from 1892 down to the present time? A. I used to see him quite frequently. In fact I used to see him every day nearly when he was in the city. Do not see him near as often now as I used to during the last year.

C. Q. 8. From 1893 to 1898, would it be substantially correct to say that you saw Mr. Douglas on almost every working day when he and you were both in the city? A. Sometimes I don't see Mr. Douglas for two or three days. Generally see him about settling up time. Prior to 1898, I guess I saw him every day that he was down to the office.

C. Q. 9. Where was your work of loading sound records carried on in 1893? A. I loaded most of the records out to my house. About 80 per cent.

C. Q. 10. Did you have a machine or machines there for that purpose? A. I loaded five or seven original records at that time. For negro songs I loaded seven records, and for ballads I loaded five.

C. Q. 11. You mean that in one case you made seven records, on seven different machines, and in the other case five? A. Yes, sir.

C. Q. 12. Referring to the experiments which you have stated took place in November, 1893; the smaller of the blank cylinders to which you refer, and which had a pasteboard inner tube, was one of the black or chocolate colored blanks which were sold for use with the graphophone at and previous to that date, was it not? A. I don't know what they sold for the graphophone. I never took very kindly to a graphophone at that time. But they have greatly improved since then.

C. Q. 13. Are you familiar with what is known as the Ozo-cerite blank? A. I am not.

C. Q. 14. Did this blank have a thin coating of wax on the paper tube? A. The blank appeared to me to have the ordinary wax which cut as free as the other. Excepting for the inner tubing I should judge it was the same composition as the other.

C. Q. 15. You noticed no difference, except the difference in diameter and the presence, in one case, of a paper tube? A. That was the first time I ever loaded up a paper cylinder or with paper in it. The first one and the last.

C. Q. 16. You say the diameter was about one and a quarter inches. You mean the external diameter? A. I should judge the cylinder was about that large around (witness showing with his finger and thumb the size). I don't know the size of it, I merely surmise it was half the size of the other cylinder.

C. Q. 17. The machine with which these experiments were made I understand you to say was an old-fashioned graphophone in which there was a movable mandril held between chucks which pulled apart. Is that correct? A. That is correct. Yes, sir.

C. Q. 18. And that machine Mr. Douglass brought with him for the purpose of these experiments. Did he take it away again after the experiments were completed? A. Yes, sir; I had no use for it.

C. Q. 19. Had you ever seen it before, or have you ever seen it since? A. I have seen a number of those chuck machines. I do not know that I have seen that particular machine.

C. Q. 20. Did you use the same recording and the same reproducing devices for all three of the records you made at that time? A. My recollection is that I used the same recorder; I did not manipulate the machine. It was the same reproducer, I think. I am not positive it was the same reproducer. I did not put it on, or take it off. I am certain it was.

C. Q. 21. You have stated that it was the same reproducer, but that you are not positive. Please explain. A. Mr. Douglass brought the machine out there to experiment with; we were experimenting with the blanks, not with the recorder or the reproducer.

C. Q. 22. What sort of motor did you use to drive that machine? A. A battery.

C. Q. 23. Do you mean the machine had an electric motor? A. We used my batteries. I always have a number of batteries there.

C. Q. 24. You know the difference between a battery and a motor, do you not? A. Oh, yes. I thought you asked me where I got my power. That was run by one of those old-fashioned motors underneath.

C. Q. 25. Was it an electric motor? A. Yes, sir.

C. Q. 26. How did you determine the speed at which the records were made? A. I didn't speed the motor. But I made an estimate that it was running the same as I run my machine. From the fact that I got two verses and two choruses on the record.

C. Q. 27. Do you think, Mr. Leachman, that your recollection is absolutely reliable as to the speed at which you made more than six years ago, one particular record out of ten thousand that you have made in the course of your life? A. I think it is reliable from the fact that I got on two verses and two choruses.

C. Q. 28. Could you state as to every sound record that you made how many verses and how many choruses you put on? A. I could not.

C. Q. 29. Did you have anything to do with speeding the motor for the making of the records made that day which you think was made at about twice the speed used in the first and second experiment? A. I could not say whether I speeded up the machine or Mr. Douglass.

C. Q. 30. How near the end of the blank was the end of that record? A. I can't remember exactly, but I think there was some space left, but not very much. I think it lacked about a quarter of an inch in getting off. There was some little space left.

C. Q. 31. In giving your present estimates of the speed used in making the last of the three records you go entirely by the circumstance that as you now recall it, you only put one verse and one chorus on the record. Is that right? A. That is right.

C. Q. 32. Now, how do you know that you did not as a matter of fact put two verses and one chorus, or one verse and two choruses on that record? A. Why, because I loaded the record. When I got through with it there was one verso and one chorus on it. I think Mr. Douglass got all the speed out of it he could get.

C. Q. 33. Have you seen any of those records since that day? A. I have never seen a record I loaded out of thousands for Mr. Douglass since he took them out of my house.

C. Q. 34. You state that you have loaded a great many grand records. Please state when you loaded the first record of this class? A. I think the first grand record I loaded was loaded for Mr. Mitchel, the popular hatter here in Chicago, I could not tell you how many months ago it was since the graphophone grand came out.

C. Q. 35. Some time during the present year was that? A. Yes, sir.

C. Q. 36. What machine did you use for that purpose? A. I used the graphophone grand, and also the phonograph grand.

C. Q. 37. You have in your direct examination testified as to three experiments and conversations at different times. Have you testified to all the experiments and conversations in which you were concerned relating to this subject prior to the use of the graphophone grand, and if there were any other experiments or conversations in which you were engaged relating to this subject, please state what they were? A. I don't know of any. No, sir. I have made lots of experiments for myself, not for Mr. Douglas.

C. Q. 38. You have stated that on the occasion of the first experiments, which you locate in November, 1893, Mr. Douglas explained the advantage of higher speed to be that you didn't have to be so careful in loading the records. Was that the extent of the explanation given you at that time? A. Oh, no.

C. Q. 39. Please state what further explanation he made? A. The cylinder revolving at a rapid rate of speed, double the ordinary speed, made the diaphragm bite in, making the vibrations positive, and spreading them out.

C. Q. 40. That explanation he gave you in 1893, did he? A. As near as can remember in 1893.

C. Q. 41. Did you understand it then, and do you understand it now? A. What I understood then is the same as I understand now. I thought I understood it then, and I think I understand it now. In conjunction with this I want to make an explanation, I have a special record called the "Little Jumbo Record" which is of twice the speed of the ordinary record of the same size and considerably over twice as loud.

C. Q. 42. When did you begin making these little jumbo records? A. For the market I have only been making them a few months, I could not say how long.

C. Q. 43. They contain one verse and a chorus do they? A. Yes, sir.

C. Q. 44. Have you made many records of this kind? A. Lately I have made a number of them. I think the first installment of them was 144, twelve dozen the first batch.

C. Q. 45. Do you use the ordinary two and a quarter inch blank? A. Yes, sir.

C. Q. 46. How do you understand that the higher speed of the record makes the diaphragm "bite in"? A. I can't only describe it in my way. That the high speed of the cylinder has a tendency to make the diaphragm vibrate quicker and sharper and more positively. I would like to say in conjunction that the only

explanation I can make in loading these records if you cut the speed of the jumbo records down to 120 you get the same old record you have had for years and years.

C. Q. 47. Referring to the experiment with disks which you locate in the fall of 1894, can you give a clearer description than you have given of the machine that was used in that experiment? A. I merely loaded them; I don't know anything about the machine. I remember this, that the cutter instead of cutting out to the edge of it went out from the center. It cut from the center out.

C. Q. 48. How near the center did the cut begin? A. I could not say. I could only get very little on the disk.

C. Q. 49. How near the edge did the cut go? A. I could not state that.

C. Q. 50. How many revolutions per minute did the tablet carry a minute? A. I could not state that.

C. Q. 51. The results you got at that time, as I understand your testimony, were not so good as those you made in the previous year, is that correct? A. It stands to reason that it wasn't, as I didn't know anything about the machine, and my first love was a phonograph, and I have always loaded phonographs and still do up to the present time. I would like to state that the first graphophone I ever loaded was in 1893 when Mr. Douglass came to my house.

C. Q. 52. Referring to the experiment which you located in the summer of 1895, do you remember anything about the time, except that it was in warm weather? A. I do not. The only recollection I have is that it was a business machine. I am pretty positive that it was in 1895. It might have been later than that but I think it was in 1895.

C. Q. 53. What were the records you made on those two cylinders? A. I wouldn't attempt to state.

C. Q. 54. Were they songs or other musical records? A. They were songs.

C. Q. 55. How many verses and choruses did you get on them? A. I am not sure about that. If I got two verses and two choruses on it I sung pretty fast.

C. Q. 56. Mr. Douglass asked you to put two verses and two choruses on, did he? A. Mr. Douglass frequently requested me to do things that I attempted to do but if I could not do I simply did the best I could, that was all. The paring was in ridges, was very badly done.

The question repeated? A. I am not positive whether I got two verses and two choruses on or not.

C. Q. 57. Did Mr. Douglass ask you to put two verses and two choruses on? A. Mr. Douglass sent out the big blanks requesting me to speed the machine up and try and get two verses and two choruses.

C. Q. 58. You state that you took the blanks down to Mr. Douglass after you had loaded them up. Where was Mr. Douglass while you were doing the loading? A. Circulating around downtown, I guess.

C. Q. 59. What sort of a motor did that machine have? A. I could not state.

C. Q. 60. Do you remember any thing about it further than that it was a business graphophone and that it had a small knob on the end of the mandril which could be turned so as to prevent the record cylinder from slipping off? A. I do not.

C. Q. 61. After this event which you locate in the summer of 1895, when did you next converse with Mr. Douglass on the subject of high speed records? A. Oh, I could not state. We talked about it numbers and numbers of times.

C. Q. 62. Did you have any talk on that subject in 1896? A. I could not state positively. We talked a number of times about it.

C. Q. 63. Do you remember any thing that was said at these conversations? A. I do not. Douglass would advance his theory and my experience has been that they were pretty practical. I generally followed his instructions.

C. Q. 64. You have had several conversations with him lately on that subject, haven't you? A. I don't remember that lately we have had any until I was called up here Saturday.

C. Q. 65. You have had no talks with him until Saturday with reference to the testimony you would give in this case, or with reference to the events about which you were to testify? A. Positively no, not until I left this office Saturday.

C. Q. 66. Was the talk you then had at this office or after you left it? A. After I left it.

C. Q. 67. Did Mr. Douglass advance his theories at that time and discuss them with you? A. I went out of this office and made a B-line for a pool room. He did not, he did not have time, I wanted to get rid of Douglass.

C. Q. 68. How important would it have been during the past six years to have produced commercial sound records very much louder, clearer and more natural than those that have been sold on the market during that time? A. I would state that I could not supply, could not make one-fourth of the quantity I could have

sold, I mean of the old style records, the same that I made right along, the same records. There would be no necessity for me to change it.

C. Q. 69. Could you or could you not have obtained a higher price for the records vastly superior to those you were making, in loudness, brilliancy and naturalness? A. I charge just the same for the two records now. The jumbo records and the other. And I would like to state that I am the only one that has held up the price of records in the phonograph business to the best of my knowledge.

C. Q. 70. If there is no advantage commercially in making the high speed record, why do you make them now? A. We have got a special concert polyphone, jumbo machine for which I load these especially short but loud records for concert purposes only. The polyphone jumbo is as loud as either of the other single diaphragm grands.

C. Q. 71. You have stated in substance, as I understand your testimony, that there was no object for you, individually, during the past six years to make any better records than you were making for sale. Can you tell me, from your knowledge of the general business, whether it would have been an important thing for the business during those years to produce a sound record having the advantages of the grand record? A. I believe from the wonderful sales of graphophone and phonograph records that had there been a better quality on the market, unless they could have been put on the market for the same price, it would not have been specially advantageous.

(Signed) SILAS F. LEACHMAN.

The further taking of this testimony is adjourned until Tuesday morning, ten o'clock.

H. M. MUNDAY,
Notary Public.

Tuesday, December 5, 1899, ten o'clock. Met pursuant to adjournment. Present as before.

And, thereupon, EDWARD H. AMET, a witness on behalf of contestant Douglass, was produced, and being first duly sworn, testifies as follows:

Q. 1. What is your name, age, residence and occupation? A. Edward H. Amet; I reside at Waukegan, Illinois; my age thirty-nine; my occupation that of electrical engineer and inventor.

Q. 2. Do you know Leon F. Douglass? A. I do.

Q. 3. About how long have you known him? A. About eight years.

Q. 4. Did you ever have any conversation with Mr. Douglass about a large cylinder or record talking machine? A. I did.

Q. 5. When? A. About a year ago, some time in October, 1898.

Q. 6. Relate the conversation? A. Mr. Douglass told me that he thought he could get a good deal more volume out of a record by making it larger in diameter, and that he intended to see about having blanks made for it so he could test it.

Q. 7. Did he say how large these blanks would be? A. He said about six inches. He said he was going to make the first ones about six inches, was the words he used.

Q. 8. Did he, at any other time, talk with you about this matter? A. I saw him shortly after and he told me that he had seen such a machine in operation down east, and that he was right about the large records giving more volume, and mentioned that you might hear it four blocks away.

Q. 9. From this last conversation did you understand that he had been east between the first and second conversations? A. Yes, sir.

Q. 10. Do you recollect making for Mr. Douglass at any time a disk machine in which the record tablet was a flat disk of wax? A. Yes, sir.

Q. 11. State when this machine was made as near as you can remember? A. It was made in the fall of 1894. Just what month I cannot state.

Q. 12. Describe the machine briefly? A. It consisted of a small clock motor having a brass disk upon which the wax disk was placed. A screw for carrying the reproducing arm over the disk as the disk revolved, making the record in the form of a spiral.

Q. 13. About how large was the diameter of the wax tablet disk and about what was the diameter of the inner and outer spirals of the record? A. As near as I can remember, the inner spiral

was an inch and a half in diameter; the outer circle of the record was very close to five inches.

Q. 14. Did the motor drive the tablet carrying disk at the same or at different speeds while the record was being formed on the inner and outer portions of the tablet disk? A. The motor ran a constant speed the entire time, the tablet revolving constantly at the same speed.

Q. 15. Did you and Mr. Douglass test this machine? A. We tested it a great number of times.

Q. 16. What, if anything, was noticed in relation to the record and reproduction from the inner and from the outer spirals of the record? A. The record lost its volume as it approached the center, the volume being a great deal more at the outer edge than at the inner edge of the record.

Cross-Examination by Mr. Mauro.

C. Q. 1. What means have you of fixing the date of construction of the disk machine regarding which you have testified? A. I made it during Mr. Dickinson's absence in Europe and worked two or three months during that period upon it.

C. Q. 2. Do you know that Mr. Dickinson was in Europe in the fall of 1894? A. That is where we sent all his letters during that period and I have reason to believe he was in Europe.

C. Q. 3. Is that the only time he was in Europe? A. No, sir.

C. Q. 4. How long since you last saw that machine? A. Pretty close to five years.

C. Q. 5. Do you know where it is now? A. There were ten of them and I don't know where any of them are at present.

C. Q. 6. What did you do with them? A. I expressed them from Waukegan to the Chicago Talking Machine Company at 98 Madison street.

C. Q. 7. You sold them to that company did you? A. I built them for that company.

C. Q. 8. How many of these disk tablets were made for those machines? A. As near as I can remember there were about two or three dozen successful disks made. A greater number would break in the mold.

C. Q. 9. Have you in your possession, or under your control any of those disks or the mold in which they were made? A. I haven't any of the disks, the mold consisted of a cast iron plate bored out and polished. I do not know where it is, but think it might be found in the factory.

C. Q. 10. Have you any thing else in the way of records or drawings that would show the size of those disks? A. They were made the exact size of the brass carrying plate that belonged on the machine. There were never drawings made.

C. Q. 11. Have you any of the brass carrying plates in your possession? A. I have the original plate used in the first experiment.

C. Q. 12. And that was the same size of all the others? A. Yes, sir. It might have been a little smaller, come to think of it. We enlarged the disks, not to exceed a quarter of an inch.

C. Q. 13. Have you measured that plate recently? A. No, sir.

C. Q. 14. What were those disks made of? I mean the tablets on which the records were made? A. Broken phonograph blanks, melted and molded.

C. Q. 15. How many records did you make or see made? A. A great many, as we made them for the best part of a month experimenting, one or two hours a day.

C. Q. 16. All this was done substantially at the same time was it? A. It covered a period as I remember, of between three and four months, between the conception and completion of the machine.

C. Q. 17. Is that machine described in any patent? A. Not to my knowledge.

C. Q. 18. You have testified about a conversation which you say took place in October, 1898, with Mr. Douglass. Where did that conversation take place? A. In the office of the Talking Machine Company, at 107 Madison street, Chicago.

C. Q. 19. What means, if any, have you of locating it in October, 1898? A. Mr. Douglass requested me to come in and hear the polyphone, and desired a testimonial. After I had said the polyphone was very loud he told me, as near as I can remember, that the polyphone could not begin to produce the volume that his new machine would, and then asked me what I thought would be the result of using a record six inches in diameter.

C. Q. 20. My question is, how do you know that this took place in October, rather than at some other time? A. Because I get into Chicago so little that when I do come, I remember the month.

C. Q. 21. Did Mr. Douglass invite you to call by letter? A. By telephone.

C. Q. 22. By telephone to your place at Waukegan? A. At Waukegan, yes, sir.

C. Q. 23. According to your testimony your recollection seems to be that you came to Chicago twice in the month of October, 1898. Is that the case? A. Yes, sir.

C. Q. 24. What was the occasion of your coming the second time? A. To see a new gas engine for an automobile.

C. Q. 25. Did that business take you to the office of the Talking Machine Company? A. Yes, sir; I was to meet Mr. Charles Dickinson there, who was interested in the engine, and who desired my opinion upon it.

C. Q. 26. Did you see the polyphone on the second visit? A. I did.

C. Q. 27. And had some further conversation about it? A. As before stated, Mr. Douglass mentioned that he had heard a phonograph or talking machine having a large record on his trip east, from which he had just returned.

C. Q. 28. When Mr. Douglass asked your opinion as to what would be the result of using a blank six inches in diameter, what did you say? A. I thought it would be very loud.

C. Q. 29. Are you the same Edward H. Amet against whom suit was brought by the American Graphophone Company, in which suit a final decree for the complainant was entered? A. Yes, sir.

Re-direct by Mr. Munday.

Q. 1. Have you any ill-feeling against the American Graphophone Company? A. No, sir; I have not.

EDWARD H. AMET.

And thereupon, CHARLES H. DOUGLASS, a witness on behalf of the contestant, Douglass, was produced, and being first duly sworn, testifies as follows:

Q. 1. What is your name, age, residence and occupation? A. Charles H. Douglass, thirty-three years old, and I live at 90 Lincoln Park boulevard, Chicago; I have been selling talking machines on a commission basis.

Q. 2. You are a brother of the contestant, Leon F. Douglass, are you not? A. Yes, sir; I am.

Q. 3. Charley, I wish you would tell us, in your own way, what, if any thing, you know about a certain talking machine record containing a song or part of a song entitled "I Love you in the same Old Way"? A. In the month of September, 1897, when

I was living with my brother, L. F. Douglass, my mother and two sisters at No. 90 Pine street, Chicago, it was on a Sunday, I don't remember the exact date, I put several records on the graphophone for my own amusement. The third or fourth record that I put on happened to be this song, entitled "I love her in the same old way." When I started the machine to reproduce it it drawled out the words, it seemed to be running too slow. I mentioned that fact to my brother who was lying on the sofa at the time, he informed me that it was right the opposite, that it was taken at a higher rate of speed. He told me to raise the speed of the machine and that it would be all right. I did so and started the reproducer again at the first beginning of the record, and I heard one of the loudest reproductions of the human voice I had ever heard on a talking machine. It was not only the loudest record that I had ever heard but it had a much better quality, reproducing the voice more natural. I was very much interested in it and wanted to know who the singer was. My brother informed me that it was sung by the author of the song. I remarked that he must have a very powerful voice to make a record so loud. He informed me that the loudness was due to the high rate of speed the record had been taken on. He went on to explain that the record running at a high rate of speed struck the reproducer, or the recorder I should say, with a greater force therefore making the indentations much longer, so that when the reproducer run over it it had a better opportunity to drop in the indentations and bring out the full tone which it would not do on the records taken at a slower speed. I told him the only objection I could see to it was of taking a record at that speed that it would be impossible to get more than one verse and two choruses on a cylinder. He informed me that that could be overcome by making a larger cylinder. And I asked him what he meant by that, one twice as long, and he replied that one twice the diameter would answer the purpose better. That was about all that was said at the time. I reproduced several other records which sounded very inferior after that.

Q. 4. How do you fix the date of this conversation and demonstration as being in September, 1897? A. I remember that I went to work for the Columbia Phonograph Company about the first of September of that year, and also know that my brother left the last of September for California in that year, and when he returned in October he got a flat on the third floor of the same building and had it all fitted up ready for his wife when she came back from California.

Q. 5. When your brother fitted up this flat on the third floor

of the same building, did he remove anything from the other place of residence, and if so, what? A. He removed the graphophone and all the records that we had in our house, including this record, "I love you in the same old way."

Q. 6. When did you next hear anything of this record? A. I never heard anything of the record until about six weeks ago, when my brother started to ask me about a record, and I stopped him and told him that I knew what he was going to ask me, that I thought he intended to refer to this record, "I love you in the same old way."

Q. 7. How recently have you seen or heard that record? A. I heard it to-day.

Q. 8. In what condition was it? A. In poor condition now. It sounds like it had been reproduced several hundred times.

Q. 9. You say it sounds like it had been reproduced several hundred times; how can you tell that? A. In my capacity, in looking after the Arcade, in different phonographic parlors, it has generally been my duty to test the records on the slot machines to see when they were worn out, so as to replace them with new ones whenever they were needed. I have been about three or four years at that kind of work; so that I was able to judge and know how many times a record had been reproduced. When a record whistles it is generally an indication that it has been used a great many times. When I listened to this record to-day it had a slight whistle to it, which leads me to think that this record was worn out by constant use, by running several hundred times on the machine.

Q. 10. Have you that record in your possession? A. Yes, sir, I have.

Q. 11. Will you please produce it? A. Yes, sir, here it is. (The record produced by the witness is offered in evidence on behalf of Douglass, to be marked "Douglass Exhibit 1897 Sound Record.")

Q. 12. State what selection or song is upon this record "Douglas Exhibit 1897 Sound Record" which has just been offered in evidence, and how much of the song or selection is on the record? A. There is a vocal solo and piano accompaniment by Mr. Ford, entitled "I love you in the same old way." There is one verse and two choruses of this song. It completely fills the blank.

Q. 13. Look at this blank and state whether it is more or less than ordinarily filled with the sound record? A. This record has at least one inch more of a record on it than the average run of records.

Q. 14. When you put this record through a reproduction as

you have stated in September, 1897, and again to-day, how fast did you run the talking machine during the reproduction? How many revolutions per minute, as near as you can state? A. I should judge it was about double the rate of speed that records are generally made at, which is 120 revolutions per minute. In both cases I run the machine as fast as the motive power, which was electricity, was able to run the machine.

Q. 15. You heard this record to-day before you came here, will you state how it sounded to-day as compared with how it sounded to you in September, 1897, in respect to volume, loudness and quality of sound? A. The quality seemed about the same. It did not seem near as loud as when I heard it before. It had that whistling sound which detracted from the quality and loudness of the record.

Recess here taken until half past one o'clock this day.

Cross-Examination by Mr. Mauro.

C. Q. 1. Have you any objection to making a test of the record that you have identified in evidence by reproducing it in my presence? A. No, sir; I have no objection.

A recess is here taken for the purpose of the test.

C. Q. 2. In running off the exhibit 1897 record at what you considered about proper speed to give the song at the appropriate pitch, how long did you find that it took to run off one verse and chorus with the announcement, and how long for all the matter on that record? A. One minute and thirteen seconds for the verse, chorus and announcement, and one minute and forty-two seconds for all the matter on the record.

C. Q. 3. For the purposes of comparison you ran off an ordinary stock record of the same selection containing two verses and two choruses and the announcement, the machine being speeded at what you deem the proper speed for that record. How long did it take to run off one verse and chorus with the announcement and how long for the entire record? A. I will answer the second part of the question. It took two minutes and fifty seconds to reproduce the two verses and two choruses, with the ordinary stock record. I made the time one minute and thirty-one seconds for one verse and one chorus and the announcement.

C. Q. 4. At the same speed at which the stock record was run off the exhibit record was reproduced. Please state, if you can, how long it required under those conditions to run off one verse and chorus with the announcement on the exhibit record?

A. I can't answer the question you ask but, I can state how long it took to reproduce the entire exhibit record, which was three minutes and thirty-two seconds at the ordinary speed.

C. Q. 5. Did you take any figures of the last test that was made, viz: When the exhibit record was run at the same speed at which the sound record had been run just previously? A. No, sir, I did not take the figures.

C. Q. 6. How long, Mr. Douglass, have you been engaged in the talking machine business? A. About eight years.

C. Q. 7. Please state your different employments during that time, naming the persons or concerns for whom or for which you have been working? A. I first rented a machine from the North American Phonograph Company, in 1891, to give exhibitions around the city with that. I run that for a number of weeks, three or four weeks was all. I then made arrangements with the Chicago Central Phonograph Company and placed six slot machines in the Clark Street Museum, which I operated on commission for about three years. When I left there I bought three phonographs and placed them on the boats running from the Van Buren street pier to the World's Fair grounds; that was when the fair first opened in 1893. After the fair had been opened about two months my brother made arrangements to put slot machines in the Midway, of which I had charge until the last month of the fair, at which time I went to work for the Chicago Talking Machine Company which opened a parlor at 98 Madison street, Chicago, at which place I was employed until the next fall, about one year. I had charge at night. At that time I went to San Francisco to take charge of slot machines at the Mid-Winter Fair. I was only there about three months when I sold out and came back to Chicago. I went back into the parlor at 98 Madison street where I worked for some time, I don't remember exactly how long. In the latter part of 1894 they, the Chicago Talking Machine Company, opened a parlor at 205 State street. I acted as night manager at that place for something over a year. After resigning there I made several trips on the road selling talking machines of different descriptions. In 1897 when the Columbia Phonograph Company opened at 211 State street I was employed there for about one year as night man. When I left there I opened an office in the Adams Express building at 183 Dearborn street, under the name of the Douglas Talking Machine Company, which place I have run up to the present time.

C. Q. 8. During how much of this time have you been associated in business with your brother, Leon F. Douglass? A. I was always under his management during the entire time, with the exception of the three months I run machines on the boat.

C. Q. 9. For what periods of time did you reside in the same house with your brother, L. F. Douglass? A. I have always resided in the same house with him ever since I have been in Chicago, up to October, 1897.

C. Q. 11. As I understand your testimony, you had not seen the Exhibit 1897 Record, from the time your brother took it away from No. 90 Pine street, until lately, within a few days; is that correct? A. I have not seen the record until to-day since that time.

C. Q. 12. If you know the record put in evidence to be the identical record which you heard reproduced in the fall of 1897, please state how you know it? A. I know it by the announcement on the record and the piano effect which is much different from any I ever heard in a talking machine record. That is about all, but I am positive it is the same singer and the same record that I heard at that time.

C. Q. 13. You have stated, as I understand, that the Exhibit 1897 Record sounds to-day very differently as to both quality and loudness from the way you recollect it sounded in 1897, assuming it to be the same record; is that the case? A. Yes, sir; the record seems to be worn a great deal. But the same features that I recognized in the record at that time are plain to me now.

C. Q. 14. One of the features that impressed you at that time, that is in 1897, was loudness, was it not? A. Yes, sir; loudness and natural tone.

C. Q. 15. And those features are missing to-day? A. The loudness is missing somewhat, but the quality of the voice remains.

C. Q. 16. In comparison with the stock record of the same selection which we heard to-day, is it not a fact that the stock record was superior to the Exhibit Record in both loudness and quality? A. No, sir; I do not consider that it was.

C. Q. 17. To your mind then, or to your senses, the Exhibit Record seemed both louder and of better quality than the stock record? A. It did not seem louder, but the quality seemed a great deal better. When you take into consideration that it had been run and used a great deal, and that the stock record was a new record.

C. Q. 18. I would like you to answer the question without any qualifications, that is to say, give your impressions of the two records just as they are, without any regard to the fact, if it be a fact, that the Exhibit Record has been frequently used? A. I say I think that the Exhibit Record has a better quality, but I don't think it is any louder than the other one.

Re-direct Examination.

R. D. Q. 1. In the experiments or tests of the Exhibit Record which you made in Mr. Mauro's presence and mine, you found, as I understand you, that it took one minute and forty-two seconds to reproduce all the matter on the Exhibit Record at the proper speed for reproducing the same, and that it required three minutes and thirty-two seconds to reproduce all the matter on the same record at the ordinary speed of 120 revolutions per minute? Is that correct? A. Yes, sir, it is.

R. D. Q. 2. This shows that the speed at which the Exhibit Record was made is somewhat more than double the ordinary speed of the 120 revolutions per minute, does it not? A. Yes, sir, it does, by eight seconds more than double the speed.

R. D. Q. 3. Who produced, and to whom did the stock record belong which contained two verses and two choruses of the song, I love you in the same old way, and which you have been asked about in the cross-examination? A. Mr. Mauro produced it out of his pocket. I could not say who it belonged to.

R. D. Q. 4. Was this stock record one sung by the same person as that of the Exhibit Record? A. No, sir, it was not. The stock record was sung by J. W. Myers for the Columbia Phonograph Company of New York and Paris. He is the best singer they had. The other record was sung by Mr. Ford, the author of the song, I love you in the same old way, who was not an experienced phonograph singer.

R. D. Q. 5. Is Mr. Myers an experienced phonograph singer? A. Mr. Myers has been making records over five years to my knowledge.

R. D. Q. 6. Since September, 1897, has any improvement or change been made in recorders of talking machines which makes any change in the loudness, and quality of the record? A. Yes, sir; the recorder that is now used has been greatly improved since that time. They make a record at least twice as loud as the old style of recorder.

R. D. Q. 7. In reproducing this stock record, which Mr. Mauro took from his pocket, and about which you have been asked on cross-examination, did you run the machine at the ordinary speed of 120 revolutions, or did you speed it up to a higher speed? A. To reproduce it to give the natural tone, the speed had to be raised a trifle higher, be raised a trifle higher than 120 revolutions per minute.

R. D. Q. 8. About how much higher did you speed the machine up than 120 in reproducing this stock record? A. I should judge about ten or fifteen revolutions more per minute.

Re-cross Examination by Mr. Mauro.

R. C. Q. 1. In several of the questions put to you on re-direct examination, a speed of 120 revolutions per minute has been spoken of. For the sake of accuracy, I would ask you to state whether that speed was measured, or whether it was an estimate? A. The speed was not measured, but a very slight change in the screw, which regulates the speed, would increase it at least ten or fifteen revolutions per minute. That speed of 120 was measured the only way I know of measuring the speed, that is by counting the revolutions of the large pulley wheel on the mandril.

R. C. Q. 2. Who did the counting? A. My brother, L. F. Douglass. I counted it once, myself, and made the count 11 revolutions in five seconds, when Mr. Mauro was reproducing his stock record.

R. C. Q. 3. How does the timing of the reproduction of a sound record prove the speed at which that record was made? A. Any one who is used to listening to records can usually reproduce a record at the exact speed it was taken at by means of adjusting the feed screw. If the record was taken very slow, it would have to be reproduced slow in order to bring it out in the same tone in which it was recorded in.

R. C. Q. 4. Do you know the key in which Mr. Ford sung the exhibit record? A. No, sir; I do not.

R. C. Q. 5. Do you know the key in which that record was reproduced to-day during the experiments under discussion? A. No, sir; I do not.

R. C. Q. 6. Is that an original record, or duplicate? A. That is an original record.

R. C. Q. 7. Do you know what recorder was used by Myers in making the stock record? A. I don't know, but I have an idea that it was one of the new style recorders.

R. C. Q. 8. Should you say that was an original, or duplicate? A. I could not say positively whether it was an original or duplicate. I know it is a new record.

R. C. Q. 9. You know, of course, as a matter of experience and as a former employe of the Columbia Phonograph Company, that their stock records are all, or practically all duplicate, do you not? A. Yes, sir; I do.

(Signed) C. H. DOUGLASS.

The further taking of this testimony is adjourned until ten o'clock to-morrow, Wednesday, Dec. 6th, 1899.

H. M. MUNDAY,
Notary Public.

Wednesday morning, ten o'clock, Dec. 6, 1899. Met pursuant to adjournment. Present as before.

And thereupon IRA G. FOSLER, a witness on behalf of contestant Douglass, was produced, and being first duly sworn, testifies as follows:

Q. 1. What is your name, age, residence and occupation?
A. Ira G. Fosler; my age, twenty-eight years; I reside in Chicago, and my occupation that of machinist.

Q. 2. Yesterday when the witness, Charles H. Douglass, Mr. Mauro, myself and others were present at 107 Madison street making some tests with an exhibit record, you were also there, present, for a few minutes, were you not? A. Yes, sir.

Q. 3. Did you listen to the record there tested at the time you were present? A. I did.

Q. 4. What was it? A. I love you in the same old way.

Q. 5. By whom; and by whom sung? A. Composed by Mr. Ford and sung by Mr. Ford.

Q. 6. That record is known in this case as "Douglass Exhibit 1897 Sound Record." I wish you would state when you first knew anything about that record and the making of it? A. I don't know whether I heard that record before. I don't know whether I heard that song sung before we made that record or not.

Q. 7. When was that record made? A. It was made the first part of September, 1897.

Q. 8. How do you know that—were you present? A. I was present.

Q. 9. Just state connectedly how you came to be present where the record was made, and what happened, in its regular order, as near as you can remember? A. Mr. Douglass asked me to go along over with him and take the machine and battery over to Lyon & Healy's music store. The only ones present that I know of was Mr. Douglass, and I and Mr. Ford and the piano player; I don't remember his name.

Q. 10. Now state what you did? A. We made several records, I don't just exactly remember how many; I don't know as we made any other records besides that song or not. I think we made three or four of it, as near as I can remember.

Q. 11. Well, what happened then? A. We took the machine and battery back to the store at 211 State street.

Q. 11½. Who sung the song recorded? A. Mr. Ford.

Q. 12. Who manipulated the machine? A. I think Mr. Douglass did.

Q. 13. Was the machine run at the same speed all the time?
A. No; it was not.

Q. 14. State what the fact is concerning this? A. The last record that he took he turned the machine up, that is he run the speed up as high as it would go.

Q. 15. Did you see him do this, yourself? A. Yes.

Q. 16. At what speed were the other two or three records taken previous to the last? A. At about 120 revolutions per minute.

Q. 17. Did you test these records out, or any of them, by reproducing them there at that time? A. I only remember of testing one or two of them; that is, part way through, just to see how good they were.

Q. 18. Which ones were tested, the first ones, or the last?
A. The first ones.

Q. 19. How do you fix the date of this occurrence as being early in September, 1897? A. Because it was at the time I put the batteries into the parlor for running the parlor machines.

Q. 20. What parlor? A. The Columbia Phonograph parlor.

Q. 21. Where located? A. At 211 State street.

Q. 22. What city? A. Chicago, Illinois.

Q. 23. How do you know that you put the batteries of the machines into this parlor of the Columbia Phonograph Company at 211 State street, Chicago, early in September, 1897? Why might it not have been in some other month or some other year? A. I know it occurred the first part of the month because I left the 11th of September, 1897. I put in all the machines and batteries before I left. Had the parlor all fixed up. I left for Muscatine, Iowa, with Mr. Douglass' motor cycle, and I stayed at Muscatine until the 16th. I got back to Chicago the 17th, and stayed here until the 20th, when I left for home. I went from here to Davis, Illinois; then I went from there to Seward, Nebraska. I was gone about three weeks. After that I did the repair work on the third or fourth floor, I don't remember which, at 211 State street. I know it was in 1897, because we took possession of that place about the 1st of September of that year.

Q. 24. When did you first hear the record which was made at the fast speed, the last one made at Lyon & Healy's? A. About three or four weeks ago.

Q. 25. Are you able to state from an examination of the rec-

ord itself, and from listening to it, whether it was made at a high speed or not, and at what speed? A. I could tell by hearing it. I think it was made at about 237 revolutions per minute, as near as I could get at it, as I tested it just once or so; that was about the speed I found it.

Q. 26. What noticeable changes, if any, have been made in recorders—that is, the diaphragm and stylus apparatus for cutting the sound record on the cylinder—since 1897 that you know of? A. They are made lighter, and the glass, instead of being clamped in, is laid down and held in place with wax, and the setting is changed somewhat that holds the recording stylus.

Q. 27. Mr. Fosler, if an experienced phonograph singer should load that song upon one of the ordinary-sized record blanks by use of the more modern, improved recorder device, with the record blank running at the high speed of 237 revolutions per minute, or thereabouts, what would be the result as to the loudness and volume of the record produced; that is to say, as compared with the concert phonograph or graphophone grand? A. I believe it would be almost as loud and equal in volume.

Q. 28. What reason have you for believing this?

(Counsel for Macdonald objects to the preceding question and answer as incompetent, the witness not having been qualified as an expert, and as not being the best evidence of the fact sought to be ascertained.)

A. Because I have heard some records made since running at high speed that I considered almost equal to the concert phonograph or graphophone grand. The records were made by Mr. Leachman on the ordinary-sized blanks.

Q. 29. At what speed? A. I did not test the speed. But I know we took it at high speed because we turned the machine way up in reproducing them so that they would sound right.

Cross-Examination by Mr. Mauro.

C. Q. 1. How long, Mr. Fosler, have you had experience in the use of talking machines, and particularly in the making of musical records? A. About three years and a half.

C. Q. 2. Has that experience been as a machinist? A. Part of it.

C. Q. 3. What was the rest of it? A. Doing repair work and experimenting.

C. Q. 4. Do you mean repairing talking machines and appliances connected therewith? A. Yes, sir.

C. Q. 5. For whom have you worked during those three years? A. For the Chicago Talking Machine Company, the Columbia Phonograph Company and the American Graphophone Company.

C. Q. 6. Anybody else? A. And the Talking Machine Company.

C. Q. 7. You say that you were present one day at Lyon & Healy's store in this city when a certain song was sung entitled "I love you in the same old way," by Mr. Ford, and when a record of that song or several records of that song were made on a talking machine. Do you know what became of that record or those records, if there were more than one? A. I think that Mr. Douglass took them to his house, those were not used in the parlor.

C. Q. 8. Were any used in the parlor, and if so, how many? A. I believe there were, but I don't remember how many.

C. Q. 9. You don't certainly know anything about it, do you? A. No, I don't.

C. Q. 10. You lost sight of those records on that day and don't know what became of them? A. Yes. I don't remember what became of all of them.

C. Q. 11. What sort of a machine was used in making the records? A. The graphophone, a battery machine.

C. Q. 12. Can you identify it in some way so as to distinguish it from other sorts of graphophones that used a battery? A. It was a commercial graphophone. I don't remember what type they were called.

C. Q. 13. Beyond connecting up the machine and battery, what, if anything, did you have to do with the making of those records? A. I might have taken the records and done them up and put them in a box and have handed the blanks to Mr. Douglass to put on the machine. And I think I run part of the first one or two records on the machine to see what they sounded like.

C. Q. 16. Are you sure of these things? A. I am pretty sure of them.

C. Q. 17. You have been present I suppose a great many times when sound records were being made, have you not? A. Yes, sir.

C. Q. 18. Did you pay any more attention to what was going on on this occasion than you usually do? A. No, I didn't.

C. Q. 19. For whom were you working at that time? A. For the Columbia Phonograph Company.

C. Q. 20. And the machine and blanks that were used were taken to Lyon & Healy's from the office of the Columbia Phono-

graph Company, 211 State street, were they? A. Yes, they were.

C. Q. 21. What kind of blanks were they? Columbia blanks or Edison blanks? A. I don't know what kind they were, I think it was an Edison blank.

C. Q. 22. You have just been shown by the attorneys for Douglass a sound record, which I believe was the Exhibit 1897 sound record put in evidence yesterday, and after examining that record you gave the concluding sentence of your last answer, viz: "I think it was an Edison blank," is that the case? A. Yes.

C. Q. 23. I understand you then that the blank on which said Exhibit sound record was made is, in your opinion, an Edison blank? A. Yes.

C. Q. 24. Was it an unusual thing to have sound records made at Lyon & Healy's for use in the Columbia Phonograph parlor in this city? A. Yes, it was.

C. Q. 25. Is this the only instance of the kind you have knowledge of? A. Yes. I think there were records made there afterwards but not by us.

C. Q. 25. I understand you that some few weeks ago you heard a reproduction of a sound record consisting of the song "I love you in the same old way," which you think was the one made at high speed on the occasion you have described at Lyon & Healy's, and that this was the first time you heard that record, assuming it to be the same record. Have you heard it since, and if so when and where? A. I heard part of it yesterday. That was the only time that I heard it since. This was at 107 Madison street.

C. Q. 26. How did the reproduction of that record, part of which you heard yesterday, compare with the record of the same song which you heard three or four weeks ago in respect of loudness and quality? A. Just the same.

C. Q. 27. Who, if any one, besides Mr. Ford, made records or sung or talked into the machine on the occasion when these records were made? A. No one.

C. Q. 28. Was there an announcement made preceding the the musical part of the record, and if so, who made it? A. I think Mr. Ford did.

C. Q. 29. Did some one tell him what to say? A. I don't remember.

C. Q. 30. Was it the usual announcement of the Columbia Phonograph Company? A. I don't remember whether it was or not.

C. Q. 31. You were not paying very close attention to what went on, were you? A. No, I was not.

C. Q. 32. It was not an event of any particular interest to you? A. No.

C. Q. 33. Just one instance of a thing that you had witnessed a great many times before and since? A. Yes.

C. Q. 34. Who was present when you heard the reproduction three or four weeks ago, and where did it take place? A. Mr. Douglass and Mr. Babson, at the Talking Machine Company's room, 107 Madison street.

C. Q. 35. And you had some conversation then as to the time when that record was made, and the circumstances, did you? A. Yes. I was asked by Mr. Douglass if I knew what that record was, and I told him I did, and I was told that it was the one that was made at Lyon & Healy's at that time.

C. Q. 36. By whom were you told? A. By Mr. Douglass.

C. Q. 37. By Mr. Leon F. Douglass who is present in this room? A. Yes, sir.

Re-direct by Mr. Munday.

R. D. Q. 1. Did you recognize the song and the voice of the singer when you heard this record? A. Yes, I did.

R. D. Q. 2. Did you ever hear Mr. Ford sing any other records before or since that time? A. No, I never saw Mr. Ford since or before.

R. D. Q. 3. Yesterday at 107 Madison street, during the experiment with this record I asked you to listen to it, and you listened to it a few minutes. You then said "that is the record, I recognize the voice"; have I stated that truly?

(Objected to unless Mr. Munday will offer himself to be sworn as a witness.)

A. Yes, that is true.

R. D. Q. 4. Did you ever hear any other records of the voice of Mr. Ford who sung this record, this exhibit record. Do you understand me? A. I don't think I have.

Re-cross Examination.

R. C. Q. 1. Mr. Fosler, you never heard Mr. Ford sing but once, and that was more than two years ago. That is correct, is it? A. Yes, sir.

R. C. Q. 2. You heard him at a time when you were not paying particular attention to what was going on. That is correct is it? A. Not any more than I usually did when I was where records were made.

R. C. Q. 3. Do you wish the court to understand you as asserting that you have such a remarkable ear and memory that you can recognize after two years a voice which you only heard once, as that voice is represented by such a copy thereof as is made by a talking machine?

(Objection. It is improper to argue with the witness about a question of fact, and to attempt to distort his mind by asserting as something remarkable, something about which there is nothing remarkable whatever.)

A. I heard the voice more than once. I heard the voice three or four times. And after hearing the song a number of times afterwards by different singers, I think I could tell who it was sung by after hearing it again.

R. C. Q. 4. You are familiar of course with the well-known professional singers who make records for talking machines? A. With some of them.

R. C. Q. 5. Can you by hearing the song or part of the song tell who the singer was? A. Yes, I could.

R. C. Q. 6. Did you ever try it? A. I did.

R. C. Q. 7. State the circumstances? A. In testing machines I could tell whether I had a Quinn record or a Gaskin record, because I have heard them sing.

R. C. Q. 8. These records have the names of the singers on them have they not? A. Yes, sir.

R. C. Q. 9. So that there is no great difficulty in telling who sung them? A. Yes.

R. C. Q. 10. Do you not believe it to be a fact that your recognition of the Exhibit record results from the circumstance that Mr. Ford's name is in the announcement thereon? A. I don't believe that I heard the announcement when I heard the record three or four weeks ago.

R. C. Q. 11. But you knew before you listened to the record that you were going to hear this song by Mr. Ford, did you not? A. I don't think I did.

R. C. Q. 12. You can't remember as to that? A. No, I can't.

(Signed) IRA G. FOSLER.

And thereupon HENRY B. BABSON, a witness on behalf of contestant Douglass, was produced, and being first duly sworn, testifies as follows:

Q. 1. What is your name, age, residence and occupation?

A. Henry B. Babson; twenty-four years of age; I reside in Chicago; I am in the talking machine business.

Q. 2. Do you know Leon F. Douglass? A. Yes, sir.

Q. 3. About how long have you known him? A. Since 1893. I never knew him personally before that, although I had heard of him.

Q. 4. Were you present yesterday at 107 Madison street when Mr. Charles H. Douglass, Mr. Mauro and myself were making some tests with a certain sound record containing a song entitled "I love you in the same old way," sung by Mr. Ford, containing one verse and two choruses of said song, and which is marked "Douglass Exhibit 1897, Sound Record"? A. I was.

Q. 5. When did you first examine this record and hear it?

A. About three or four weeks ago.

Q. 6. From your connection with talking machines and the talking machine business, are you able, by reproducing a record and hearing it reproduced, to tell at what speed the record was made? A. Yes, sir.

Q. 7. Explain how you are able to do this? A. I first speed the machine until the record sounds natural; then count the revolutions of the main shaft, or mandrel shaft.

Q. 8. Have you ever so tested this record marked "Douglass Exhibit 1897, Sound Record" for the purpose of ascertaining the speed at which it was made? And if so, state when, where and the result of your test. A. I tested the speed at which it was made, when I heard it about three weeks ago, and found the speed to be about 240 revolutions per minute. The test was made in the office of the Talking Machine Company, at 107 Madison street.

Q. 9. Please state more in detail what you did in making this test? A. The test was made on a phonograph after speeding the machine so that the record sounded natural, I counted the revolutions of mandrel by holding a watch in one hand and feeling the screw on the belt pulley of the mandrel shaft with the fore-finger of my left hand, which is very similar to a doctor counting the pulse of a person.

Q. 10. What period of time did you count the revolutions?

A. I counted several times, 30 seconds each time.

Q. 11. Are you familiar with what is known as the "Graphophone Grand" or "Concert Phonograph" and the operation and results thereof? A. I am.

Q. 12. Supposing the same recorder to be used in taking the record of a song sung in the same manner and with the same force by a regular phonograph singer first upon the record blank of a graphophone grand in the regular way in which these machines are used, and then on the ordinary phonograph machine and phonograph blank about two and a quarter inches in diameter with the machine speeded to about 240 revolutions per minute in the latter case, what would be the comparative results in respect to loudness, naturalness, clearness and quality, of the two records thus formed when the same are respectively reproduced at the same speed as used in making these records? The grand machine, of course, to be run at the customary speed used in said machine in both making and reproducing the record? A. I have tested a great many records made in both of these ways, and find there is no difference. The volume and quality seems to depend entirely upon the surface speed.

Q. 13. Has your experience in the practical operation of talking machines been such as to enable you to tell by hearing a record what its condition is in respect to wear, and whether it is substantially new or worn out? A. Yes, it has.

Q. 14. When you examined and heard this Douglass Exhibit 1897 Record what did you find its condition to be? A. To be very badly worn.

Q. 15. When did you first hear anything about a large cylinder talking machine, and from whom, and where? A. In October, 1898, on the train from New York to Bridgeport, Connecticut, I heard Mr. Douglass talking to Mr. E. D. Easton regarding a six inch cylinder.

Q. 16. Who else, besides Mr. Easton, Mr. Douglass and yourself was with you at the time of this conversation on the train going from New York to Bridgeport? A. Mr. Andrew Devine.

Q. 17. At the time of this conversation do you remember how you were sitting in the car? A. Mr. Devine and myself were facing the engine, Mr. Devine next to the window. Mr. Douglass and Mr. Easton were facing us, and as I remember it Mr. Douglass was next to the window part of the time and Mr. Easton was next to the window part of the time, the change being brought about in disposing of our papers that we brought our lunch in and in getting a drink of water.

Q. 18. Mr. Douglass and Mr. Easton were sitting together

on the same seat and you and Mr. Devine were sitting together on the same seat, is that correct? A. Yes.

Q. 19. When and where did you first hear a large cylinder talking machine making a reproduction? A. This same day at the factory of the American Graphophone Company at Bridgeport, Conn.

Q. 20. At this time when you first heard a large cylinder talking machine making a reproduction, could you see the machine, and if not, why not? A. When I entered the room where the machine was it was playing, but I was unable to see anything but the horn as the machine was covered up with a piece of paper.

Q. 21. Who was present at this time when you first heard the machine, and how did you happen to go into the room where it was playing or reproducing? A. Mr. E. D. Easton, Mr. Andrew Devine, Mr. Douglass, Mr. Macdonald and myself were present. We were sitting in another room in the factory waiting for the machine to be got ready, and when we were told it was ready we all went into the room where the exhibit was made, the machine was playing when we entered.

Q. 22. Who, if any one, invited you to come and hear a reproduction in this room? A. Mr. Easton.

Q. 23. When did you first see a large cylinder talking machine and how did you happen to see it? A. When the machine finished playing the record which it was playing when we entered the room, Mr. Macdonald knocked off the paper which was hiding it from our view when he stopped the machine. I think this was accidental, and Mr. Easton seemed somewhat annoyed.

Q. 24. What, if anything, did Mr. Easton say to you when the paper that covered the machine fell off? A. When the paper fell off Mr. Easton said: "Isn't it funny that Mr. Douglass was telling me about this very same thing on the train up here?"

Q. 25. What, if anything, did Mr. Douglass say? A. He said, "I knew it would do it for I had tried it before," or words to that effect.

Q. 26. Are you able to recollect the exact words used by Mr. Easton and Mr. Douglass at this time? A. I am not, in quoting them, I only use my own words in giving the idea they conveyed to me.

Q. 27. You are positive in your recollection that Mr. Easton and Mr. Douglass used words substantially to the same effect as those you quoted in giving your answers? A. I am.

Q. 28. After leaving Bridgeport, Connecticut, where did you and Mr. Douglass go? A. Waldorf Hotel, New York City.

Q. 29. What, if any thing, did Mr. Douglass tell you there at the Waldorf Hotel on your return from Bridgeport in respect to having at any time communicated his idea of a big cylinder talking machine to Mr. E. D. Easton? A. He told me of several of the experiments he had made and stated that he had written to Mr. Easton several times regarding a large cylinder machine.

Q. 30. When, to your knowledge, if ever, did Mr. Douglass first begin making a large cylinder talking machine and when was the first one tried, and describe how it was made? A. On our return from New York, Mr. Douglass made the first large cylinder talking machine that I know any thing about. In fact he made two or three. The first machine as I remember it used a six inch blank and I should judge was completed about two weeks after our return. I don't know the exact date that we returned, but it was the latter part of October, 1898. I think the first machine was made by simply extending the frame of the type A graphophone so that the mandrel would swing a six inch cylinder and turning a wooden mandrel so that it would take this cylinder, slipping the wooden mandrel over the regular mandrel. The trunnion was also raised, and new gears substituted for the train of gears ordinarily used to move the diaphragm carriage. As soon as this machine was completed we tried it.

Q. 31. How did it work? A. It worked fine.

Q. 32. Where did you get the blank record cylinder for trying it? A. I don't remember, I think it was one Mr. Douglass made.

Cross-Examination by Mr. Mauro.

C. Q. 1. How long, Mr. Babson, have you been closely associated with Mr. Leon F. Douglass in business? A. In 1893, I worked for the Chicago Central Phonograph Company, of which he was treasurer. I saw very little of him in that year oftentimes not seeing him for months at a time. In December, 1893, I went to California for the Chicago Talking Machine Company and returned to my home in Nebraska, in March, 1894. Mr. Douglass was in Chicago at that time, and I only saw him once or twice. From 1895 to 1897, I was working for the Chicago Talking Machine Company, of which he was vice-president. From August, 1897, until October, 1898, I saw very little of him and we never talked business, as we were in opposition. Since then we have seen each other most every day.

C. Q. 2. You are interested now in Mr. Douglass' talking machine enterprises, are you not? A. I am interested in the

Polyphone Company. But have no interest in any of his other enterprises.

C. Q. 3. Your interest in the polyphone began before the fall of 1898, did it not? A. It began about the middle of October of 1898, as I remember. It was not until some little time after Mr. Douglass left the employment of the American Graphophone Company.

C. Q. 4. You were interested in the polyphone before the trip to Bridgeport, which you have described, were you not? A. I had talked with Mr. Douglass about it, but I think it was after that time before I really became financially interested in it.

C. Q. 5. Were you one of the original parties in interest who formed the Polyphone Company? A. Yes, I was.

C. Q. 6. So that your interest began at least as soon as that company came into existence, did it not? A. Yes, sir.

C. Q. 7. You say that some weeks ago you heard reproduced a sound-record consisting of a song entitled, "I love you in the same old way," which sound record you estimated from the test you have described to have been made at the speed of about 240 revolutions of the cylinder per minute. Where is that sound-record now, if you know? A. I don't know.

C. Q. 8. Have you to your knowledge seen it since? A. I saw and heard it yesterday in my office when Mr. Mauro, Mr. Charles Douglass, Leon F. Douglass, Mr. Munday and Mr. Adcock were there testing it.

C. Q. 9. Do you mean to say that you know of your own knowledge that that was the same sound-record that you tested three weeks ago? A. I feel sure that it is; as sure as I can be of anything.

C. Q. 10. Is it not a fact, Mr. Babson, that during the tests yesterday you paid very little attention to what was going on, and were occupied with other matters? A. I should judge that the record was run through ten or fifteen times. I heard the record run all the way through once at the speed at which it was taken, and part way through two or three times, one time being when it was running at the ordinary speed, making it almost impossible to understand anything on it.

C. Q. 11. You heard yesterday a record reproduced several times either completely or partially. Now, what I want to know is whether you can state of your own personal knowledge that that record was the same identical record which you tested some weeks ago? A. I feel sure that it is.

C. Q. 12. I have not asked for your feelings but for your

knowledge, and I will ask you again to state whether you know the two records referred to in the previous question to have been identically the same, and if you know it state how you know it? A. The record I heard yesterday is identically the same record I heard about three weeks ago, or a good duplicate of the same. I am not able to tell an original from a good duplicate.

C. Q. 13. You have referred in your testimony to, or have been asked concerning, the "Graphophone Grand" or "Concert Phonograph." Are those two different names for one machine, and if not, please explain what those names mean in business? A. The machine known as the "Graphophone Grand" is made by the American Graphophone Company; it uses a cylinder about five inches in diameter. The "Concert Phonograph" is made by the National Phonograph Company; they use the same sized cylinder. The machines are practically the same, both using the same sized cylinder, the cylinders being interchangeable, the Graphophone people having followed out the phonograph construction in their machine.

C. Q. 14. You have stated that you first saw and heard a Graphophone Grand in October, 1898. When did the Concert Phonograph first come on the market, to your knowledge? A. A few months later; I don't remember the exact date.

C. Q. 15. Can you give the date of the trip to Bridgeport, regarding which you have testified? A. I don't know as I can give the exact date, but think I can.

C. Q. 16. Have you made more than one visit to the factory of the American Graphophone Company at Bridgeport? A. I have not.

C. Q. 17. So that the events to which you have referred as occurring on or connected with that visit could not possibly be confused with any other? A. It could not.

C. Q. 18. And the events which you have described as occurring on the train going to Bridgeport, and at the factory in Bridgeport, either occurred on that visit or never occurred at all? A. They occurred on that visit.

C. Q. 19. What I wish to make sure of is, that there is no possibility of mistake as to the occasion when the events occurred which you have described, and that you are as certain of the time and place as you are of any other matter to which you have testified. Is that your meaning? To make my meaning clearer I will say, is there no possibility of your having located events which occurred another time as having occurred on the occasion of that trip to Bridgeport? A. None whatever.

C. Q. 20. You were with Mr. L. F. Douglas in New York and vicinity in the month of October, 1898, and spent several days there. Is that the case? A. I was; we were there together.

C. Q. 21. What was the business which took you and Mr. Douglass to New York at that time? A. I went to buy talking machines, records and supplies, and Mr. Douglass went to introduce the polyphone.

C. Q. 22. You had with you a polyphone connected with an Edison phonograph, did you not? A. Mr. Douglass took a polyphone with him. It was an Edison phonograph. I also think he also had a polyphone attachment for the graphophone with him. But I was very busy and paid very little attention to his polyphone business.

C. Q. 23. Were you present at any exhibitions of that polyphone at the Waldorf Astoria in New York during your stay there at that time? A. I was.

C. Q. 24. Please state what you can remember regarding those exhibitions, naming the persons to whom it was shown? A. One evening there was a number of phonograph people up to hear the machine, not having met most of them before I am unable to remember their names. I think I could identify them if I saw them. They were all very much pleased, many of them bringing their own records to test the machine. I can mention some of those who were present. Mr. Hunting, Mr. Spencer, Mr. Norcross, there was a lot of others, but I do not remember them.

C. Q. 25. Do you remember any other exhibitions except that or those referred to in your last answer? I mean during the occasion of your visit to New York? A. I went into the room once or twice when Mr. Douglass was showing the polyphone to other parties. I think he showed the machine more or less during the day time to interested parties.

C. Q. 26. Do you remember meeting me at that hotel at that time? A. I remember one evening when Mr. Easton, yourself, Mr. Douglass and myself ate at the same table. I am not sure whether it was at that visit or not.

C. Q. 27. Do you remember that the polyphone was shown to Mr. Easton and myself after dinner, and that you and Mr. Douglass left the table in advance to get things ready, that we, I mean Mr. Easton and myself, came up to the room and that a number of records were reproduced on the polyphone, and a conversation of some little duration took place?

(Objected to as not proper cross examination, the same not being germane to any subject inquired about on the direct examination, and counsel for Macdonald is notified that he is making the witness his own.)

(Counsel for Macdonald replies that he accepts with the utmost cheerfulness all the legal and other consequences that may result from this line of cross-examination.)

A. I do not recall any thing of a conversation that took place, but do remember of Mr. Easton and Mauro coming into the room.

C. Q. 28. Had this incident gone from your mind until my question recalled it? A. Yes, it had.

C. Q. 29. Are you able now to state after your memory has been refreshed by my question, whether the incident referred to occurred during the time of your visit to New York in October, 1898? A. I should say that it did. But I cannot tell whether we got up from the table and went up to the room, or whether we had come from somewhere else.

C. Q. 30. Are you able to state whether the incident, so far as you recall it, occurred before or after your visit to Bridgeport on the occasion when you first saw and heard the graphophone grand? A. I am not able to tell at present, and do not know whether I will be able to fix the date or not.

The further taking of this testimony is adjourned until to-morrow morning at ten o'clock.

H. M. MUNDAY,
Notary Public.

Thursday morning, ten o'clock, December 6th, 1899. Met pursuant to adjournment. Present as before.

And thereupon Mr. BABSON resumed his testimony.

C. Q. 31. In your answer to cross-question 13, speaking of the graphophone grand and concert phonograph, you said that the machines are practically the same, the cylinders being interchangeable and that the graphophone people have followed out the phonograph construction in their machine. Do you wish in that answer to imply that in the construction of the graphophone grand the construction of the concert phonograph was followed, so as to obtain interchangeable cylinders and other similarities? A. I do not wish to say that the construction of the concert phonograph was followed in order to use their cylinders, but meant to say that the construction of the body of the graphophone grand machine was almost identical with the class "M" phonograph, which has been on the market for a great many years.

C. Q. 32. Your answer to cross-question 13 would give the im-

pression that the similarities between the graphophone grand and the concert phonograph, particularly in respect of using the same size cylinder was brought about by the graphophone people having followed the construction of the so-called concert phonograph. I wish to know clearly whether that was the meaning you wished to convey?

(Question objected to for the reason that cross-question 13 and the witness' answer thereto, does not seem to counsel for Douglass to give or convey any such impression as stated in the question.)

(Counsel for Macdonald replies that there can be no conceivable objection to the last question unless it be desired that the answer of the witness should remain in such shape as possibly to convey a wrong impression to persons unfamiliar with the fact that the so-called concert phonograph was a tardy but complete imitation of the graphophone grand, and that the concluding sentence of the answer to cross-question 13 cannot have been brought into the answer with any other motive of which counsel for Macdonald can conceive.)

(In reply counsel for Douglass calls attention to the fact that the witness has already stated on the record in answer to cross-question 14 that the concert phonograph first came on the market a few months after the graphophone grand, and that cross-question 13 asks the witness to state whether the two machines were substantially one and the same machine under different names, and that the concluding sentence of the witness' answer to cross-question 13 stating the well known fact that "the graphophone people have followed out the phonograph construction in their machine," is strictly responsive to the question, and counsel for Douglass protests against any improper motives of the witness being stated or insinuated on the record.)

A. I do not wish my answer understood to mean that the graphophone people followed out the construction of the concert phonograph in order to use the same size cylinder. I refer to the type "M," Edison machine simply to describe the construction of the graphophone grand.

C. Q. 33. You say they did not follow the construction of the concert phonograph for the purpose of using the same size cylinder. Did they follow it for any purpose?

(Objected to because the motives of the graphophone peo-

ple in copying the Edison phonograph construction, if they have copied it, are entirely immaterial to this controversy.)

C. Q. 34. I am unable to tell their reasons for using that construction of their machine.

Question repeated:

A. I do not know whether they followed the construction of the concert phonograph, and do not know which machine was first made. I simply wish to state that the construction of the graphophone grand, that is the top part of the machine, is almost identically the same as the type "M" phonograph which was on the market some time before I went into the phonograph business in 1893.

C. Q. 35. You have stated that soon after the return of yourself and Mr. Douglass to Chicago from New York in October, 1898, Mr. Douglass built two or three large cylinder machines. What personal knowledge have you of the construction of those machines, and what opportunities did you have for observing their construction? A. I saw the machines and was with Mr. Douglass several times when he tested them. I saw the machines both in course of construction and after they were finished.

C. Q. 36. Where were they made and by whom? A. One or more of them were made by a mechanic that Mr. Douglass had, and I think he had one made outside entirely.

C. Q. 37. State where outside? A. I do not know.

C. Q. 38. How many such machines in all did you see? A. As near as I can remember he had three or four of them.

C. Q. 39. State where they are now? A. I do not know?

C. Q. 40. When did you last see them, or any of them? A. I do not remember having seen any of them for several months.

C. Q. 41. Do you know what became of any of them? I do not.

C. Q. 42. How many tests of making or reproducing records on those machines have you knowledge of? A. About fifty.

C. Q. 43. Where were the blanks obtained? A. I do not know.

C. Q. 44. You have no knowledge whatever as to where the blanks were obtained upon which those records were made? A. I have no personal knowledge. I think he made some of them himself and had others made by melting up old cylinders, as he was unable to get blanks of the Columbia Phonograph Company or the National Phonograph Company at that time.

C. Q. 45. To what period of time do you refer in your last answer? A. In early part of November, 1898.

C. Q. 46. By whom were the blanks made to which you have referred? A. I do not know. I was very busy with my own business, and did not pay much attention to Mr. Douglass' experiments.

C. Q. 47. Do you know where any of the records are now that were made on those blanks? A. I do not.

C. Q. 48. When and where did you last see any of them? A. I do not remember of seeing any of them for several months. I think the last one that I saw was on the machine upon which they were used.

C. Q. 49. Where was that? At 107 Madison street.

C. Q. 50. Can you readily ascertain whether those records are now at 107 Madison street, and if not, what became of them; and will you do so during the recess to-day? A. It would be impossible for me to make a thorough search, as we have a very large stock of records and machines and it would probably involve a search of two or three days time to find whether they were there or not. I will gladly make a search during the recess.

C. Q. 51. Have you since the adjournment yesterday endeavored to refresh your memory regarding the occasion when the Polyphone was exhibited to Mr. Easton and myself in your presence at the Waldorf-Astoria in New York, and if so can you now answer whether that incident occurred before or after your visit to the factory of the American Graphophone Company at Bridgeport? A. I have hardly thought of this case since leaving here yesterday, and at present am unable to fix the date.

C. Q. 52. Are you unable still to recall any conversation at that time? A. I don't remember any conversation occurring in our room in the Waldorf. As I remember it both yourself and Mr. Easton were in a hurry to go some place and were only in the room an instant.

C. Q. 53. Where were you and Mr. Douglass the day previous to your trip to Bridgeport? A. I do not remember.

C. Q. 54. Were you at the factory of the National Phonograph Company at Orange, New Jersey? A. I was there during that visit to New York but do not know whether it was the day previous or not.

C. Q. 55. Do you know whether it was before or after your trip to Bridgeport? A. I do not remember.

C. Q. 56. Where did Mr. Douglass and yourself meet Mr. Easton and Mr. Devine on the morning of your trip to Bridgeport? A. I think it was in the Bowling Green Building but could not be certain, not being very well acquainted in New York.

C. Q. 57. What time did the train leave that took you to Bridgeport, and what time did it arrive there, as near as you can remember? A. I think it left about noon, as Mr. Easton bought some sandwiches and fruit and we ate them on the train. I should judge it was about an hour's trip, as near as I can remember.

C. Q. 58. And during all that ride from New York to Bridgeport you sat with Mr. Devine and immediately in front and facing you Mr. Douglass sat with Mr. Easton. Is that your testimony? A. It is.

C. Q. 59. The seat on which Mr. Easton and Mr. Douglass sat was reversed, was it? A. It was, we were facing each other.

C. Q. 60. You say that during that ride you heard Mr. Douglass talking with Mr. Easton regarding a six inch cylinder? State what he said regarding such cylinder? A. I would be unable to tell their entire conversation regarding a six inch cylinder. Mr. Devine and myself were talking together. Mr. Devine was telling me about his home in the Thousand Islands and his canoes, etc.

C. Q. 61. You say you cannot give the entire conversation, please give all that you heard or all that you can remember about it? A. All I recall is that Mr. Douglass said that it would be an advantage to use a six-inch cylinder. I should have probably not remembered this if it had not been for the conversation I heard in the factory. But am positive that this occurred at that time on our trip to Bridgeport.

C. Q. 62. Is that all of the conversations you overheard and which you can now recall? A. That is all that I recall at present.

C. Q. 63. Who first mentioned a large cylinder? A. I do not recall hearing Mr. Easton mention it at all.

C. Q. 64. What was the subject of the conversation? A. I am unable to say. Mr. Douglass and Mr. Easton were talking business matters as I remember. Mr. Devine and myself were talking of country life and pleasure.

C. Q. 65. After arriving at Bridgeport how were you conveyed to the factory of the American Graphophone Co? A. In a hack.

C. Q. 66. How were the several persons seated in that hack? A. I don't recall.

C. Q. 67. After arriving at the factory what was the first thing done, that you remember? A. I am unable to tell the exact order of the things we did at the factory; but think that Mr. Douglass, Mr. Devine and myself were first shown through the factory. Mr. Easton did not accompany us.

C. Q. 68. Who conducted you through the factory? A. I do not remember.

C. Q. 69. Do you remember whether on that occasion Mr. Douglass had with him a polyphone attachment for a graphophone, and an attempt was made to use or test it? A. I think that is true.

C. Q. 70. Do you remember at what point in the visit you first met Mr. Macdonald? A. I do not remember being introduced to him.

C. Q. 71. During the whole time you were there you were accompanied by Mr. Andrew Devine, were you not? A. I think he was with us all the while, but as I was very much interested in the machinery he might have left a few minutes without my notice.

C. Q. 72. It was after your tour through the factory, was it not, that you were waiting, as you have said in answer to question 21, for the machine to be got ready? A. After going through the factory we, Mr. Devine, Mr. Douglass and myself, went into a small room and waited until Mr. Easton came. In answering question 21, I did not wish to say that Mr. Macdonald and Mr. Easton were in that room. I also do not think that I knew at that time that a machine was being got ready for us to hear it.

C. Q. 73. How large a room was it into which you were ushered and in which you heard the graphophone grand? A. I should judge about thirty feet wide and fifty feet long.

C. Q. 74. As I understand you, the persons who entered the room with you were Mr. Devine and Mr. Douglass, Mr. Macdonald and Easton being already in that room. Is that the case? A. As I recall it Mr. Easton came into the room where Mr. Devine, Mr. Douglass and myself were sitting, we walked along a short aisle or hall until we came to the room in which the machine was exhibited. Mr. Easton stepped into the room, closed the door. Very shortly after he opened it and the machine was playing.

C. Q. 75. You have so far not mentioned Mr. Phillips. Do you remember him? A. I think he was the gentleman that showed us through the factory.

C. Q. 76. Do you remember whether he went with you into the room where the graphophone grand was playing? A. He did not go with Mr. Devine, Mr. Easton, Mr. Douglass and myself. He was not in the room where Mr. Devine, Mr. Douglass and myself were. I do not mean to say that he was not in there at all. He took no part in the conversation and did not go into the room where the graphophone was exhibiting at the time we went in, if at all.

C. Q. 77. Do you remember whether he was present during the exhibition of the graphophone grand? A. I do not think he

was. The side door was used several times by Mr. Macdonald and Fisher. I think they were the only ones that came in and out at that door.

C. Q. 78. This is the first time you have mentioned Mr. Fisher. You remember that he was present, do you? A. I do not think that Mr. Fisher was in the room when we first went in. He afterwards came into the room and made a record.

C. Q. 79. During the first exhibition you and Mr. Devine and Mr. Douglass stood near the door at which you entered, did you not? A. We did. And Mr. Easton was also there.

C. Q. 80. Relative to your position, where was the machine and about how far away? A. The machine was at the extreme other end of the room from the door at which we entered, the length of the room, about fifty feet as near as I can judge.

C. Q. 81. What was the machine playing when you entered? A. I do not recall.

C. Q. 82. Do you remember the character of the selection? A. No.

C. Q. 83. Can't you remember whether it was a single instrument or a band, or a song, or a recitation? A. As I remember it was a song.

C. Q. 84. How many selections in all did you hear at that time? A. I think we only heard two, they repeated them several times.

C. Q. 85. And one record was made in your presence by Mr. Fisher? A. It was. I remember that specially well for Mr. Fisher started the song either too high or too low, and he had to start over again in a different key.

C. Q. 86. Was this record made after the paper which at first concealed the machine was removed? A. It was.

C. Q. 87. Was the paper removed immediately after the first reproduction that you heard? A. The paper fell on the floor when Mr. Macdonald went to shut off the machine.

C. Q. 88. And at that point, I understand you to say, Mr. Easton remarked: "Isn't it funny that Mr. Douglass was telling me about this very same thing on the train up here?" Is that your testimony? A. That is.

C. Q. 89. Isn't it very much more likely that he said, if he made any such remark, "*Wouldn't it have been* funny if Mr. Douglass *had told* me about this very same thing on the train up here?"

(Objected to as immaterial. The material thing being the fact, not what may be likely.)

A. I am positive that Mr. Easton said substantially what I have testified to.

C. Q. 90. And this occurred, as I understand you, while Mr. Easton, Mr. Devine, Mr. Douglass and yourself were standing near the door at which you entered the room. Is that right? A. We were perhaps ten feet from the door when Mr. Easton made the remark.

C. Q. 91. And Mr. Douglass' response to the remark was, "I knew it would do it for I had tried it before," or words to that effect. Is that your testimony? A. That is.

C. Q. 92. What else was said, if anything? A. That is all that I recall, on that subject.

A recess is here taken until one one-half o'clock P. M. this day.

Half past one, P. M., met pursuant to adjournment. Present as before. And thereupon the cross examination of Mr. Babson is resumed:

C. Q. 93. In listening to the first selection on the graphophone grand was the horn pointed in your direction? A. It was.

C. Q. 94. What sort of a horn was it? A. As I remember it was about a 30 inch brass horn. There was, however, other horns in the room.

C. Q. 95. Do you remember anything more of the conversation that occurred at that time except what you have related? A. Shortly after that the conversation turned to polyphones.

C. Q. 96. As I understand you the exchange of remarks between Mr. Easton and Mr. Douglass regarding which you have testified, occurred while you were standing some forty feet from the machine when the paper was removed at the end of the first reproduction. Is that right? A. The exchange of remarks occurred close to the door at which we entered. The machine was at the opposite end of the room, and the paper fell on the floor when Mr. Macdonald went to stop the machine. I would like to state here that I have paced off the distance which I think was the length of the room and find it was only 30 or 35 feet, instead of fifty feet. It would probably make the width of the room about 20 feet.

C. Q. 97. To whom did Mr. Easton address the remark which you attribute to him? A. Mr. Devine, Mr. Easton, Mr. Douglass and myself were standing together. He did not mention any name when he made the remark.

C. Q. 98. It was then addressed to the company in general, was it? A. I consider it was addressed to Mr. Devine, Mr. Douglass and myself.

C. Q. 99. In the remark you attribute to Mr. Douglass, viz: "I knew it would do it for I had tried it before," what did you un-

derstand by the first "it"? A. I understood that he had tried a machine similar to the one, or involving the same principle as the machine which we had just heard.

C. Q. 100. What did you understand by the second "it"? A. I understood that both "its" referred to the same thing.

Q. 101. The second "it" occurs after the word "do," please bear that in mind in answering the question. I don't suppose you understood that the machine would do itself? A. In the answer I confused the second and third "its" the second "it" refers to the results obtained on the machine.

C. Q. 102. Were any remarks made by Mr. Douglass or yourself regarding those results, and how they impressed you? A. I thought the results very fine and made a remark to that effect. I don't remember whether Mr. Douglass made any remark as to results or not.

C. Q. 103. After the paper was removed from the machine Mr. Douglass and yourself approached and examined it, did you not?

(Objected to because there is no testimony that the paper was removed from the machine, on the contrary the testimony of this witness is that the paper fell from the machine, and accidentally.)

Counsel for Macdonald calls attention to the discrepancies between the testimony of the witness and the statement of counsel, the witness having said that he thought that the paper fell off by accident, but as the question relates simply to the time when the paper was removed, whether by accident or design, there seems to be no occasion for the objection and statement.

A. I had a good look at the machine after the paper fell off and think Mr. Douglass also had.

C. Q. 104. Don't you remember that a conversation took place between Mr. Douglass and Mr. Macdonald, and if so state any part of that conversation which you heard and remember? A. Just before Mr. Douglass showed the polyphone attachment he suggested that they put it on the large cylinder. Mr. Macdonald said that they could not do it as he did not have another trunnion that would fit. The attachment was then put on one of the regular machines.

C. Q. 105. The polyphone attachment then was exhibited after the exposition of the graphophone grand, was it? A. Yes, sir.

C. Q. 106. What sort of an arm for carrying the recorder and reproducer did the graphophone grand have as you saw it at that time? A. I think the arm was split, but could not be certain.

C. Q. 107. Was there nothing about it that attracted your attention? A. I did not pay any special attention to the details of the machine.

C. Q. 108. In returning from Bridgeport to New York, who accompanied you? A. I think we went to the depot in the same hack in which we came, but I have no special recollection of our trip from Bridgeport to New York. I do not remember who accompanied me.

C. Q. 109. Don't you remember whether or not Mr. Easton and Mr. Devine were with you on your return trip? A. I do not. I only remember that I was very tired.

C. Q. 110. Have you forgotten with whom you sat on your return trip? A. I cannot recall that either.

C. Q. 111. Or whether you faced the engine or had your back to it? A. I can't recall, with whom I sat.

C. Q. 112. Or whether you sat next to the window or next to the aisle? A. I think that the train was crowded on our way from Bridgeport. I feel sure that we did not all sit together. I cannot recall any incidents of my return trip, more than I have already stated.

C. Q. 113. You say that after your return from the Waldorf hotel, Mr. Douglass told you of several of the experiments that he had made. State just what he said, as near as you can remember? A. He told me that he had put a cylinder on the old Edison tin foil machine. He also spoke of the trial he had made at Mr. Leachman's house, and said that he had written to Mr. Easton several times regarding the large cylinder.

C. Q. 114. Did he tell you when he had put a cylinder on the Edison tin foil machine? A. I don't remember.

C. Q. 115. Was Mr. Easton standing with Mr. Douglass, Mr. Devine and yourself, near the door of the room where you heard the graphophone grand during the whole of the reproduction of the first record? A. He was not as close to the door as we were, but was in that end of the room.

Re-direct by Mr. Adcock.

R. D. Q. 1. You have stated whereabouts in the room you were when Mr. Douglass and Mr. Easton exchanged the remarks concerning which you have testified, viz.: "Isn't it funny that Mr. Douglass was telling me about this very same thing on the train up here?" and "I knew it would do it, for I had tried it before;" now please state what persons were in that room in such position

that they would be likely to hear this conversation at the time it took place? A. Mr. Easton, Mr. Devine, Mr. Douglass and myself, were the only ones in that end of the room. Mr. Macdonald was at the extreme other end where the machine was, and I do not think it would be possible for any one to have heard the remarks with the exception of Mr. Easton, Mr. Devine, Mr. Douglass and myself.

R. D. Q. 2. When Mr. Easton made this remark which way was he facing, towards the door, or toward the machine? A. He was facing the door.

R. D. Q. 3. Do you have any interest in Mr. Douglass' invention or application for patent here in interference, or in this controversy or suit? A. None whatever.

Re-cross Examination by Mr. Mauro.

R. C. Q. 1. Were the remarks made in an ordinary tone, such as we are using in this examination? A. They were.

R. C. Q. 2. And could they have easily been heard across the room the length of the one we are in, say about 18 feet? A. If it was quiet and a party was listening, they could hear at least a part of them.

R. C. Q. 3. How far should you say Mr. Easton was from Mr. Macdonald and Mr. Fisher at the time Mr. Easton made the remark you attribute to him? A. Mr. Macdonald was almost the entire length of the room. Mr. Easton always speaks very low, and am certain that Mr. Macdonald could not have heard.

R. C. Q. 4. Please give the distance in feet as near as you can do so? A. I should judge it was about 28 or 30 feet. That is if the room is about 35 feet long.

R. C. Q. 5. As I understand you the position was about as follows: Mr. Douglass and yourself stood about ten feet from the door, through which you entered; Mr. Devine stood a little nearer the machine; Mr. Easton still a little nearer the machine, while Mr. Macdonald and Mr. Fisher were standing at or near the machine. That you do not know whether Mr. Phillips was in the room or not. Please state whether I have correctly given your testimony and if not, correct it in any particulars wherein the statement is not accurate. A. When I stated that I thought we were about 10 feet from the door I estimated that the room was 50 feet long. I think I can make a drawing that will locate our positions relative to the door and the machine, and probably save all this confusion. I have only estimated the distances and I am not fa-

miliar in judging distances. Mr. Phillips was not in the room, and I do not think that Mr. Fisher was in the room when we entered. As soon as we entered Mr. Douglass and myself stood very close to the door. Mr. Easton stood half facing us and half facing the machine. I think that Mr. Devine stood at the right, probably not more than one or two feet in front of Mr. Douglass and myself. We formed a part of a semicircle at the rear end of the room, until the machine stopped playing the first record.

R. C. Q. 6. Do you mean your last answer to apply to the time when Mr. Easton made the remark attributed to him? A. When Mr. Easton made the remark we were close together, none of us probably having taken more than two steps.

R. C. Q. 7. Did you during recess look for those sound records I asked you about this morning, and, if so, with what result? A. I looked for them about five minutes, and was unable to find any of them.

(Signed) HENRY B. BABSON.

And thereupon Mr. LEON F. DOUGLASS was produced, and, being duly sworn, testifies in his own behalf as follows:

Q. 1. What is your name, age, residence and occupation? A. Leon F. Douglass, age thirty years, occupation vice-president of Polyphone Company, and also vice-president of the Chicago Motor Cycle Company. I reside in Chicago, Illinois.

Q. 2. Do you know the contestant, Thomas H. Macdonald, and, if so, about how long have you known him? A. I do. I think I first met him in 1892.

Q. 3. Do you know Mr. E. D. Easton, Mr. Andrew Devine and Mr. Philip Mauro, and, if so, how long have you known each of them? A. I met Mr. E. D. Easton, I think, in February, 1892. I met Mr. Andrew Devine in March, 1892. I don't believe I met Mr. Philip Mauro until a year or so later.

Q. 4. What connection, if any, have Mr. E. D. Easton and Mr. Andrew Devine with the American Graphophone Company, who, it appears, is the assignee of the alleged Macdonald invention and application which is involved in this interference? A. Mr. E. D. Easton, I believe, is president of the American Graphophone Company; Mr. Andrew Devine is, I believe, vice-president of it.

Q. 5. The Mr. Thomas H. Macdonald, E. D. Easton and Andrew Devine to whom you have referred, are the gentlemen now present in this room attending this examination, are they not? A. The gentlemen referred to are present in this room.

Q. 6. They were also here attending the examination when the examination opened last Monday morning, were they not? A. I don't know that they were all here when it opened; they came in during the morning.

Q. 7. Are you the Leon F. Douglass who is one of the contestants in this interference? A. Yes, sir.

Q. 8.. When did you first conceive the invention shown and described in your application which is involved in this interference, and which is set forth as follows in the declaration of interference:

"The method of forming a sound record which consists in placing a vibratory cutting style in contact with a tablet causing said style to vibrate in a plane approximately perpendicular to the surface of the tablet by impressing sonorous vibrations thereon and simultaneously moving said tablet at such a speed that sounds requiring one minute in their production form a record approximately forty-four meters in length"?

A. In the year 1888.

Q. 9. When did you first disclose it to others? A. In the year 1888.

Q. 10. When did you first practically use it or reduce it to practice? A. During the winter of 1888 and 1889.

Q. 11. Please describe particularly what you did when you first conceived the invention, disclosed it to others and reduced it to practice or put it to use? A. In the year 1888 I was employed as manager of the Nebraska Telephone Company, at Grand Island, Nebraska. In June of that year while at Omaha with Mr. W. R. King, who was also from Grand Island, I saw for the first time an Edison wax cylinder phonograph. I was very much interested in this machine and when I returned to Grand Island, or rather along in the fall, I secured what is known as an "Edison Tin Foil Phonograph" from a young man by the name of Burt Corbin. This machine had a brass mandrel on it about five or six inches in diameter. The machine was run by hand, turned by hand, and the mandrel was fed along under the diaphragm. I took the mandrel out of the machine and formed a mold around it, using the mandrel for a core. Into this mold I poured melted wax, about a quarter of an inch thickness for the wall of the cylinder, replaced the mandrel, holding the wax cylinder on it into the phonograph machine. This wax cylinder I pared off by resting a lathe chisel on the diaphragm arm and pared off the cylinder true and smooth as possible. I had a jeweler in Grand Island make for me a recorder point and reproducing point and levers for holding them similar to the ones I had seen in the Edison phonograph at Omaha. These points were

made of steel. These I placed onto the diaphragm and made a record on the cylinder and reproduced it again. I made perhaps altogether a half a dozen different cylinders, and perhaps fifty or more trials in making records on the cylinder. This work was carried on at different times off and on during the winter as I had time to give to it.

Counsel for Macdonald requests the magistrate to note that at this point at the instance of counsel for Douglass, he the magistrate, read to Mr. Douglass the subject-matter of the interference as contained in the official declaration thereof.

Counsel for Douglass desires the magistrate to note that the magistrate was requested to read the question to the witness and that counsel for Douglass, after the question was read, requested the subject-matter of the interference to be read to render the question clear.

I showed them to only a few friends, their names were W. R. King, John Houck and Robert Klenck. I made records in their presence and reproduced them. These records were made at various speeds and I am sure that I turned the mandrel holding the cylinder which was five or six inches in diameter, at least 100 to 120 revolutions per minute, and the records formed while turning the cylinder at a rapid rate, were much louder than the machine I heard at Omaha. This work was carried on in my private work room just off the office and the results were shown to only a few friends, I have already mentioned. None of these records were ever sold, nor was there ever any public exhibition given with them. As I understood from papers and general report the Graphophone Company and Mr. Edison owned the patents covering the making of records on wax cylinders, therefore I could do nothing with the machine which I made at that time.

Q. 12. In this machine when you were making or cutting the records on the wax cylinder and the mandrel, in what direction in respect to the surface of the wax cylinder did the cutting point or style vibrate? A. Approximately perpendicular.

Q. 13. In this machine when you were making or cutting the record on the wax cylinder or mandrel, how, or by what means was the cutting point or stile caused to vibrate? A. By the diaphragm when you spoke into it, by the indentations on the cylinder when you reproduced it.

The further taking of this testimony is adjourned until to-morrow morning, Dec. 8th, at ten o'clock.

H. M. MUNDAY.

Notary Public.

Friday morning, Dec. 8, 1899, ten o'clock. Met pursuant to adjournment. Present as before.

And thereupon Mr. Douglass resumed his testimony.

Q. 14. In these experiments which you made at Grand Island, with an old large mandrel Edison machine, with a wax record blank on the mandrel, you have stated that the mandrel shaft was turned by you with a crank, and that you turned the crank at different speeds in making these experiments, or some of them. Please state what was the result of turning the mandrel at different speeds, both in making the record and in reproducing? A. The first records that I made were made at a slow speed, I remember this because it was some trouble to get the machine ready to make the record, and the record did not run very long, therefore I turned it slowly so as to get as many experiments on the cylinder as possible. I believe the gentleman from whom I procured the machine had been operating it as a tin foil machine. I think he told me all about his work in using the machine in that way, and I believe told me how fast I should run it. Any way I found out later by running it faster that I got better results.

Q. 15. In making these experiments, what, if anything, did you find in relation to the way you turned the mandrel in making a record, and the turning of the mandrel in reproducing the same record? A. I found in these experiments to make the voice sound natural, that it was necessary to turn the mandrel while reproducing the record, as near the same speed as possible as when the record was made. If the record was made at a slow speed, you would run the mandrel at a slow speed in reproducing it. If the record was made at a high speed you would run the record at a high speed in reproducing it.

Q. 16. You have stated that you are sure that in these experiments you turned the mandrel, holding the wax cylinder, at a speed of at least 100 to 120 revolutions per minute. How are you certain of this? A. To the best of my knowledge and belief I did turn the machine at these speeds. I came to this conclusion by trying the machine and turning my hand and keeping an account of it, and timing them. This added to the fact that it was customary to run the tin-foil phonograph at about 100 revolutions per minute, and I know Mr. Corbin, from whom I got the machine, gave me all the information he could about it, and I asked him a great many questions in regard to the machine. I will say that as near as I can possibly judge, that I am sure I turned the machine from about 100 to 120 revolutions per minute, while forming and reproducing records.

Q. 17. Are you positive that in these experiments the mandrel was turned by you at a speed of at least 100 to 120 revolutions per minute, both in making the record on the wax cylinder and also afterwards in reproducing the same record? A. I am positive as I can be of this fact, making up my conclusions in the way and in the manner I have already explained. I fully believe that I did turn the mandrel in the cylinder at 100 to 120 revolutions per minute, both in recording and reproducing the same record.

Q. 18. Please state how the results you thus obtained when turning the mandrel at this speed compared with the results produced by the Edison phonograph which you saw and heard in Omaha previously? A. The reproductions of the sounds from this machine were much louder than the machine I heard at Omaha. The machine at Omaha I had listened to with the rubber hearing tube, and it was not very loud with that, while the machine I have just described, at Grand Island, could be heard out in the hall with two wooden partitions in between.

Q. 19. Did you at this time show the Edison large mandrel machine with the wax record on the blank in operation, both in making the record and reproducing the same at the speed of from 100 to 120 revolutions per minute, to any one, and if so to whom? A. I showed it to W. R. King, who is now and has been for a number of years City Treasurer of Grand Island, Nebraska; I also showed it to J. C. Houck, who is now Chief Clerk of the Union Pacific Railway shops at Grand Island, Nebraska, which position I believe he has held for the last ten or fifteen years. I also showed it to Robert Klenck, who was at that time my assistant in the telephone office at Grand Island, Nebraska, and who frequently helped me in carrying on these experiments. Mr. Klenck is now a resident of San Francisco, Cal. I showed the machine to these gentlemen and they saw me both making and reproducing records, as I have before stated, at the speed of 100 to 120 revolutions per minute.

Q. You have stated that the brass mandrel was five or six inches in diameter, and that the wax record was about a quarter of an inch thick on the mandrel, and that the speed of rotation was from 100 to 120 revolutions per minute. Please state what surface speed this would amount to? A. If the outer surface of the cylinder was five inches in diameter, revolving at 100 revolutions per minute, the surface speed would be about 1,500 inches per minute; revolving at 120 revolutions per minute, the outside diameter of the cylinder being five inches, it would be about 1,800 inches per minute. If the cylinder was six inches in diameter, revolving at 100 revolutions per minute, the surface speed would be about

1,800 inches. If the cylinder was revolving at 120 revolutions per minute with a six-inch cylinder, the surface speed would be about 2,100 inches per minute.

Q. 21. In making the above calculation you have used the rough or common multiplier 3, instead of the more accurate decimal 3.1416, or rather 3.14159+, for determining the circumference from the given diameter, have you not? A. I have.

Q. 22. What further experiments did you next make after these at Grand Island, in relation to your invention and the subject-matter of this interference? A. The next experiment I made was in the fall of 1893, about October of that year. I had a graphophone which would hold two sizes of wax cylinder; one of these cylinders was a paper base, and covered with what is commonly known as the Edison wax. The other was the ordinary cylinder commonly used, of about two inches and one-fourth in diameter. The larger cylinder was the regular Edison phonograph cylinder, and the smaller cylinder was the ordinary graphophone cylinder, with the exception that it was covered with the Edison wax instead of with the ozocerite wax which was commonly used. This cylinder was about an inch and a quarter in diameter. I took the machine and the cylinders to Mr. Leachman's house. I remember it was about the first of October, because it was about the end of the World's Fair. I had Mr. Leachman first make a record on the small cylinder of a song while the machine was running at the customary speed of 120 revolutions per minute. He then made a record of a song on the ordinary cylinder about two and one-fourth inches in diameter, and we listened to them. I noticed that the larger cylinder of the two was very much clearer, louder and better record, and spoke to Mr. Leachman about it. I then suggested that he again sing a portion of a song while I run the machine, which was operated by an electric motor, as rapidly as it would run. I believe the machine was running twice as fast as the machine ordinarily run, or about 240 revolutions per minute, from the fact that he was only able to make a portion of the song. We then listened to this record and it was, without any question in my mind, the best reproduction I had ever heard up to that time. It was not only very much louder, but the quality of the voice was very much better, and I was much pleased with the results. I think perhaps during the day that we made two or three of these high speed records. It was Sunday and I staid there to dinner; I remember that we made some records both before dinner and after. I don't remember taking more than one of the high speed records away with me, though I may have done so. I think I took all the

small records back, as there was only a few. I also believe that I took the graphophone home with me.

Q. 23. You have stated that in making the record on the small cylinder, one and a quarter inches in diameter, the machine was run at the ordinary speed of 120 revolutions per minute, and that you next made a record on the two and a quarter inch cylinder. At what speed was the machine run in making this second record? A. The first time I made a record on the large cylinder it was run at a speed of 120 revolutions per minute.

Q. 24. At the same speed at which the record was made on the small or one and a quarter inch cylinder? A. Yes.

Q. 25. You have stated that you then listened to these two records, that on the one and a quarter inch cylinder and that on the two and a quarter inch cylinder you had made at the ordinary speed of 120 revolutions per minute. What did you do to listen to them? A. I probably removed the recorder, as this would be necessary to put the reproducer in its place, and listened to the reproduction in the usual or well known way. I also think I tested the larger one of these records on a phonograph, that Mr. Leachman had at his house.

Q. 26. Please state at what speed the graphophone was run when you reproduced these two records? A. At 120 revolutions per minute.

Q. 27. If you reproduced the larger one of them on the phonograph that Mr. Leachman had at his house, at what speed was it run when you reproduced it? A. At 120 revolutions per minute. It is always customary to reproduce all records as near as possible at the speed they were taken.

Q. 28. You have stated that the smaller of these records, one and a quarter inches in diameter, had a paper base and was covered with what is known as the Edison wax, and that the other was the ordinary cylinder commonly used of about two and one quarter inches in diameter, of what material was it composed? A. Of the Edison wax, just the same as the material used on the small cylinder, or very near the same.

Q. 29. In making the record on these two cylinders, the one one and a quarter inches in diameter and the other two and a quarter inches in diameter, while the machine was running at the ordinary speed of 120 revolutions per minute and while the same singer, Mr. Leachman, was loading them, what difference, if any, was there in the force, loudness or manner and pitch of the singing in the two cases? A. The song was sung in the same manner in both cases, and I believe it was the same song. It is always my

custom to have Mr. Leachman always sing the same song when I am carrying on a line of experiments. I think he did so in this case.

Q. 30. What is your recollection as to the force, loudness, pitch and manner of Mr. Leachman's singing in making these two records? A. In making these two records Mr. Leachman sang both times in exactly the same manner, the same volume and I am sure the same song.

Q. 31. In making the third record, the second one made on the two and a quarter inch blank, when the speed was increased to 240 revolutions per minute, how did Mr. Leachman sing as compared with his singing in making the first two records? A. He sang again the same song in the same manner, with the same volume.

Q. 32. How much of the song sung by Mr. Leachman in making these three records was put upon each cylinder, or did each record contain? A. In the first two cases while the machine was running at the ordinary speed he got on the usual amount, which was two verses and two choruses. In the third experiment he only got on one-half this amount, owing to the fact that the cylinder was running at a much more rapid rate.

Q. 33. In other words, in the third case he got on one verse and one chorus. Is that correct? A. Yes.

Q. 34. Please state how much of the surface or length of the record blank was covered by the sound record itself in the three cases? A. In the first case with the small cylinder which was six inches long, it covered about three and a half inches of the surface in length. In the second case when the two and a fourth inch cylinder was used at 120 revolutions per minute he sang the same amount or two verses and two choruses as it was placed on the smaller cylinder, and it covered about three and one-half inches in length of the cylinder. That cylinder was about four inches long. In the third case he sang one verse and one chorus on the two and one-fourth inch cylinder revolving about 240 revolutions per minute, and it covered about three and a half inches, the blank was about four inches long.

Q. 35. You have stated that in reproducing these three records at the same speeds at which they were respectively made you noticed that the reproduction was much clearer, louder and better from the two and a quarter-inch record made at 120 revolutions per minute than from the one and a quarter-inch cylinder made at the same speed, and that you spoke to Mr. Leachman about it. And that you also noticed that the reproduction of the record on the two

and a quarter-inch cylinder made at the high speed was very much louder and the quality of the voice was very much better than any that you had ever heard up to that time. What was said by you to Mr. Leachman? A. When I made the record on the one and a quarter-inch cylinder and on the two and a fourth-inch cylinder and listened to them, I noticed the difference spoken of that the larger cylinder gave very much the best results. I told Mr. Leachman that this I believed was due to the increased surface speed. And I told him that we would try it again with the largest blank, running it as rapidly as possible, and we did so, with the result that the record was again very much improved over either of the first experiments. At this time, or soon after, I told Mr. Leachman that I thought it would be a good plan to make the diameter of the cylinder larger, that is larger in diameter, because the increased surface speed spread out the indentations, and each little hill or valley, which would be more distinctly cut into the cylinder, would have an opportunity to distinctly affect the reproducing diaphragm, and that the increased speed would strike the reproducing point and communicate to the diaphragm glass a harder blow and thus make it very much louder. I gave the matter considerable thought at this time and showed Mr. Charles Dickinson the record made at the fast speed. I also showed the record to my brother Justus G. Douglass, who is in the Klondike now. He said it was the finest reproduction that he ever heard. And I told him at that time that that was the reason the machine at Grand Island was so loud.

Q. 36. What further experiment, if any, did you make next having relation to the principle of your invention involved in and forming the subject-matter of this interference; and, if any, state when and where it was made and describe what was done? A. The next experiment was not exactly a demonstration of this invention, but illustrated the principle. It was in the year 1894, some little time after I returned from Europe or about August first, say. I had Mr. Edward H. Amet make a disk machine for me. This disk was made of what is known as the Edison wax and was about four and a half inches in diameter. I had Mr. Leachman first make some records on this machine and they were not quite as satisfactory as they should have been, so I had Mr. Amet arrange an attachment which went into the graphophone and revolved the disk. The disk was revolved at a constant speed of about 120 revolutions per minute. The inner circles of the record made on this disk was about an inch and a half in diameter, the outer circles of the record ran clear

to the edge as the recorder frequently dropped off the edge of the record before the song was finished. I called Mr. Amet's attention to the fact at that time that the outer circles of this record was very much better, so far as volume, quality and naturalness was concerned than at the beginning or at the inner circles of the record. I again called Mr. Leachman's attention to the fact, the same as I explained to Mr. Amet, that the record at the outer circles of the disks or tablets were spread out and gave the diaphragm an opportunity to be more distinctly affected, thus bringing out the quality and that the increased surface speed, as the reproducer traveled to the outer portion of the disk was struck a harder blow by the indentations engraved on the disk. I also showed this machine and gave the above explanation to J. H. Thompson, who is now dead.

Q. 37. Please describe a little more fully first the construction of the disk machine, and then the construction of the disk attachment that Mr. Amet made for you to use upon the graphophone for making the disk records on the graphophone? A. The disk machine was operated with a spring motor and the disk carrier or plate had a duplicate plate beneath on which a thread was cut, a spiral thread, and a small point engaged with this thread which was attached to the diaphragm carrying arm, and, as the disk revolved, the arm and diaphragm was fed from the inside of the disk to the outside. The record making attachment consisted of a shaft which fitted into the two chucks of the graphophone and about the center of the shaft, which was about six inches long, a plate or disk holder was arranged so that the shaft by means of a bevel gear, I think, revolved the disk holder. The feed thread of the graphophone moved the recorder while the record was being made from the inside of the disk to the outside. The graphophone was run at the usual speed of 120 revolutions and the disk was revolved 120 revolutions per minute. If a better explanation is desired I can have a drawing made of it.

Q. 38. With this disk attachment on the graphophone what results did you have in making disk records for use on the disk machine? A. I made very satisfactory records, and very much better than the ones made on the disk machine itself.

Q. 39. In making these wax disk records on the graphophone with the disk attachment with the disk rotating, as you have stated, at 120 revolutions per minute, at what surface speed was the record formed at the inner or smaller circles of the spiral which you have stated were one and one half inches in diameter, and at what surface speed was the record formed at the outer and larger circles

of the spiral, which you have stated were four and one half inches in diameter. In making this calculation you can use the common or rough multiplier 3 instead of the long decimals 3.14159+. A. As I figure it the inner circle of the record being one and a half inches in diameter, revolving at the rate of 120 revolutions, would be about 540 inches. The outer circles of the record at the extreme edge being about four inches and a half in diameter, I figure about 1620 inches per minute.

Q. 40. Do you still have this disk attachment graphophone which you used in making these wax disk records, and if not what did you do with it? A. I have not. I sent it to Mr. E. D. Easton.

Q. 41. When did you send it to him? A. I do not recall now the exact time, but I think during the fall of 1894.

Q. 42. Did you have more than one of these disk machines made, and if so, about how many? A. I think I had ten or eleven made.

Q. 43. Did you sell any of them, and if not what did you do with them? I think I sold some of them to Mr. Easton. I did not sell any of the others.

Q. 44. Why did you not sell any of them except those sold to Mr. Easton? A. Mr. Easton told me that the American Graphophone Company was suing the North American Phonograph Company and Mr. Edison, and that they would not allow me to make this machine and sell it to any one, because it was an infringement of their patent, as it engraved a wax-like composition.

Q. 45. Did you ever make any public use of this disk machine? A. I did not, I showed it only to a few people.

Q. 46. What was the next experiment or demonstration that you made in relation to your invention forming the subject-matter of this interference, if any, describing particularly what you did and the results obtained? A. It was in 1895, I think, about the fall of that year, I had Mr. Leachman make some records for me at the high speed on what was called the business or commercial machine, and in this experiment I had him use blanks which, I believe, are known as "Cylinder E." The blank consisted of a paper base with a very heavy coating of the Edison wax on it, so that it made the cylinder about two inches in diameter. In this connection I wish to state that Mr. Leachman made a mistake in regard to the style of machine that was used at this time. The experiment in general was correct, as he testified, with the exception that he described the wrong style of machine. It was in July, 1897, that he made an experiment, which he referred to, of the

cylinder coming off. The paring, as he stated, on the old style business blank was very poor, because the cylinders run quite uneven. At this time, in 1895, I sent Mr. Leachman some blanks, pared ready for use, and told him to speed up a machine as fast as it would go and see how much of a record he could get on the cylinder. He did this, and brought the records down to me. He complained very much about the paring, and said he could not make much of a success, though he done the best he could. As the results were not as good as the records made in 1893, I did not push the matter further at this time.

Q. 47. Please describe more fully the business or commercial machine which Mr. Leachman used in making these records, and also state the length of the wax cylinder or blank upon which the records were made? A. This machine was practically the same machine as used in experiments in 1893. The cylinders were six inches long, and the paper base was about an inch in diameter on the inside. It was covered with a coating of wax about a half an inch thick, so that it made the cylinder about two inches in diameter, as near as I can remember.

Q. 48. After Mr. Leachman brought the records that he had made on these long six-inch cylinders, two inches in diameter, down to you, what, if anything, did you do? A. I tested the records and found, notwithstanding the poor surface on the records, that they were very loud and of good quality.

Q. 40. In testing them at what speed did you find they had been made? A. I believe they were made at about twice the speed as ordinarily used, or 240 revolutions per minute.

Q. 50. You stated that you asked him to get as much, or to see how much of the record he could get on the cylinders at the high speed at which you told him to speed the machine. What did you find the result to be in this respect? A. I found that the songs he sung were sung rather rapidly, and he did succeed in getting two verses and two choruses on the cylinders.

Q. 51. What was the next experiment or demonstration that you made in relation to your invention forming the subject-matter of this interference? A. It was in the fall of 1896. At this time Herbert Holcomb was making some records for me. We were making seven original records at one time in the record room, which was off from the office of the company, and I turned up the speed of one machine as rapidly as it would go and made two or three records in this way. As this machine run twice as fast as the others, I would stop the machine at the end of the first verse and chorus, and let him go on and fill the rest of the records in the ordinary way.

Q. 52. The rest of the records on the other six machines you mean? A. Yes. The records I made in this way at this time I took to my house and showed to Mr. Charles Dickinson. He said the records were as loud as the man's voice. And the records were very good, very loud, very fine quality, and I was much pleased with them.

Q. 53. What was the size of blanks used in this demonstration? A. It was the regular stock blank about two and one fourth inches in diameter, made of the Edison wax, as it was commonly known, I think the blanks were made by the Graphophone Company.

Q. 54. At what speed was the machine run upon which these records were made, and at what speed were the other six machines run upon which the selections sung by Mr. Holcomb were simultaneously recorded? A. These records were made upon graphophones. Six of them were running at the customary speed of 120 revolutions per minute. The seventh machine was running at about 240 revolutions per minute.

The further taking of this testimony is adjourned until tomorrow, Saturday, December 9, 1899, at ten o'clock.

H. M. MUNDAY,

Notary Public.

Saturday morning, December 9, 1899. Met pursuant to adjournment. Present as before. And thereupon Mr. Douglass resumes his testimony.

Q. 55. In this experiment or demonstration wherein six records of Mr. Holcomb's voice were simultaneously taken at a speed of 120 revolutions per minute, and a seventh record simultaneously taken of it at the higher speed of 240 revolutions per minute, how much matter of the song was contained or recorded on the ordinary speed records, and how much on the high speed record? A. On the six records made at 120 revolutions per minute, two verses and two choruses were recorded; on the record speeded at about 240 revolutions per minute, one verse and one chorus was recorded.

Q. 56. To what extent did the records fill the blanks in each case? A. The record filled the blank in both cases.

Q. 57. When you tested or reproduced these records, how did the reproduction of the one taken at high speed compare with the others? A. I found the record taken at the high speed was very much louder and of better quality than the record taken at the low speed, when I tested these records out.

Q. 58. By testing records out you mean reproducing the

sounds recorded thereon at the same speed at which the records were made, do you?

(Objected to as leading.)

A. By testing them out I mean reproducing them at the same speed at which they were recorded, or made.

Q. 59. When and where, if at all, did you next make a sound record by use of your invention, forming the subject-matter of this interference? Describing particularly what you did, if anything?

A. In the early part of September, 1897, Mr. Ford made a record for me, several records for me, of a song, of which I believe he was the author, entitled "I Love You in the Same Old Way." This song was quite popular at that time and I wished to get several records of it, so one noon I had Mr. Ira Fosler take a battery motor graphophone to Lyon & Healy's, I also had him take some blank cylinders. Mr. Ford sang the same song three or four times. The last time he sang it I turned up the speed of the graphophone and ran the machine as fast as it would go. I had Mr. Ford make a record on the cylinder running at this high speed of about 240 revolutions per minute. This last record I took to my home, and it has been in my possession ever since. In making the first records at the ordinary speed of 120 revolutions per minute, Mr. Ford sang two verses and two choruses of this song. In the last record made at the high speed he sang only one verse and two choruses.

Q. 60. Where is the record now to which you have referred in your last answer? A. The record is now in the possession of the notary who is taking this testimony, and is marked "Douglass Exhibit 1897 Sound Record."

Q. 61. You mean it is the one that was offered in evidence a few days ago and marked "Douglass Exhibit 1897 Sound Record"? A. That is the record, identified as being the one which I have just described as having made in the early part of September, 1897.

Q. 62. Did you ever reproduce or test this record out which you say was made at the fast speed, and which has been offered in evidence and marked "Douglass Exhibit 1897 Sound Record"? And, if so, when did you first do this, and where, and with what result as compared with the other records made of the same song sung by Mr. Ford at the same time? A. I reproduced this record a great many times at my house during the month of September, 1897, and since then. I tested or listened to the other records made at the ordinary speed at the time they were made. The record made at the fast speed of about 240 revolutions per minute was very much louder and more natural than the records made at the slow speed.

Q. 63. Who was present when this record marked "Douglass Exhibit 1897 Sound Record" was made? And where was it made? A. The record was made in a small room on the third or fourth floor at Lyon & Healy's music house in this city. Those present were Mr. Ford, Ira Fosler and a piano player, whose name I do not remember, and myself.

Q. 64. You have stated that in making this Exhibit 1897 Sound Record of Mr. Ford's song, sung by him, that you turned up the speed of the graphophone and ran the machine as fast as it would go, and that the speed was about 240 revolutions per minute. How do you know that the speed was about 240 revolutions per minute? A. I have tested the record, reproducing it at about the speed it was made, and have counted the revolutions of the cylinder while timing it. And I estimate that it was made at about 240 revolutions per minute.

Q. 65. What practical experience have you had in relation to the operation of talking machines which enables you to tell by reproducing or testing out the records the speed at which the record had been formed? A. I have been engaged in the talking machine business for the past ten or eleven years, and have had considerable experience in making and reproducing records. I have listened to thousands of records. I have heard a great many singers while they were making the records. And in reproducing the record I run it as near the speed at which it was taken as it is possible for me to judge from the ear, so that it sounds like the singer's voice when he sang to make the record. That is, I mean at about the same speed at which he sang.

Q. 66. Have you yourself examined the record marked "Douglass Exhibit, 1897, Sound Record" and tested it recently for the purpose of determining at what speed the record was made. And if so when, and where, and with what result? A. I tested the record three or four weeks ago at my house and found that the speed at which this record was made was about 240 revolutions per minute.

Q. 67. Who was present at this test beside yourself, if any one, and describe particularly what you did in making the test? A. There was no one present when I made this test. I speeded up the machine to about where I judged was the right reproduction of the man's voice and counted the revolutions of the mandrel by holding my finger against a set screw that revolves with the mandrel, and timed the number of revolutions in this way, and found the speed at which the record was made was about 240 revolutions per minute.

Q. 68. You say you found it about 240 revolutions. State exactly what you found to be the speed at which the record was taken by this test? A. It was 240 revolutions per minute.

Q. 69. For how long a period did you time it and what was the result of your count of the revolutions while you timed it? A. I timed it four or five times, each time for a half a minute from the second hand of my watch, and found the number of revolutions of the cylinder to be at the rate of 240 turns per minute.

Q. 70. When your brother Mr. Charles Douglass was on the stand at the request of Mr. Mauro this Exhibit, "Douglass, 1897, Sound Record" was taken over to your place of business, at 107 Madison street, and certain tests were there made in the presence of Mr. Mauro by Mr. Charles Douglass to determine the speed at which this record was taken. Were you also present at this test?

A. I was.

Q. 71. How was that test made and what was its result? A. They made several tests of this record, the only one I remember was when the record was run through at the speed at which it was taken, as I remember it required one minute and forty seconds to reproduce the entire record. When the record was run through at the speed of 120 revolutions per minute it required about three minutes and twenty-five seconds to reproduce the entire record. These figures are given from memory, and may not be correct. I did not take down the figures myself.

Q. 72. In this test before the record was reproduced at the fast speed requiring about one minute and forty seconds to reproduce the entire record, what, if any thing, was done to determine the rate of revolution at which the record should be reproduced? A. The machine was run as rapidly as possible with single battery on, but would not run fast enough to reproduce the record at the speed at which it was taken and we were obliged to put on an additional battery to get the machine to run faster or at the speed at which the record was made. A number of tests were then made.

Q. 73. The question is in making this test what was done, if anything, to determine at what speed this "Exhibit Douglass 1897 Record" should be reproduced at? How did you find the speed proper for reproducing it? A. We found the proper speed for reproducing it by listening to the reproduction of the record and regulating the speed of the machine.

Q. 74. What determined this speed to the listener? How did he know when the machine was adjusted to the proper speed for that record? A. To get a perfect reproduction you must necessarily run the reproducing record at the same speed at which it was

taken. This is easily determined by the ear and it is customary to regulate the speed so that the man's voice sounds natural and at the same speed at which he sang.

Q. 75. In making this test now please state what was done with the graphophone machine to first ascertain at what speed this "Exhibit Douglass 1897 Sound Record" should be reproduced?

A. The machine was speeded up to run as fast as possible so as to reproduce the record naturally.

Q. 76. But before finding the particular speed which was thought by the ear to be proper for the reproducing of this particular record, what, if anything, was done to find what this particular speed should be in making this test? A. I counted the revolutions of the mandrel and put on some other sound records.

Q. 77. I think you do not get my meaning. What I want to know is what, if anything, was done in making this test to ascertain at what particular speed this particular sound record, "Douglass 1897 Sound Record" should be run at to cause it to sound or reproduce the best? A. We listened to the reproduction and run the machine at 240 revolutions per minute so that the record would sound natural, and we timed the speed at which the machine run.

Q. 78. What, if anything, was done to determine if this particular record would not reproduce better at some different speed than 240 revolutions per minute before trying it at 240 revolutions per minute? A. It was run first at a speed of 120 revolutions per minute, and it dragged the words out so slow that you could not understand them, which plainly showed that it was not at the speed at which the record should be reproduced. We gradually increased the speed to different speeds and tested the record at the various speeds until the correct speed was found, which was 240 revolutions per minute.

Q. 79. After the proper speed for reproducing this record was ascertained by adjusting the machine to run at higher and higher speeds until the proper or natural speed for reproducing the record was ascertained, what was done to ascertain how long it required to reproduce at this proper speed the whole matter on the record? A. The reproduction was timed, as I remember it, took one minute and forty seconds to reproduce it at this speed.

Q. 80. What was done in this test to determine how long it took to reproduce this whole record while the machine was running at the ordinary speed of 120 revolutions per minute? A. This reproduction was again timed, as I remember it required three minutes and twenty-five seconds to reproduce the entire record at 120 revolutions per minute.

Q. 81. Please examine this Exhibit 1897 Sound Record, and state how much of the length of the blank is covered by the sound record itself? A. Practically the entire length of the cylinder is covered with the sound record.

Q. 82. At this test of this Douglass Exhibit 1897 Sound Record at 107 Madison street, when Mr. Charles Douglass was on the stand, Mr. Mauro produced what was called a stock record of the song "I love you in the same old way," as sung by Mr. Myers, and this record was put into the talking machine and run through or reproduced, the same containing two verses and two choruses of the song, when it was run through at what was thought to be the proper speed for reproducing it, it took two minutes and fifty seconds to reproduce the same, and I neglected to ask Mr. Charles Douglass when he was on the stand how much of the length of that so-called stock record blank was covered by the sound record itself. Did you examine this stock record to see how much of the blank was covered by the record itself? If so, please state? A. I examined the record and measured it and found that the two verses and two choruses and announcement of the record covered about three inches in length of the surface of the cylinder.

Q. 83. Did Mr. Ford ever at any time or at any place make, sing or load any other sound records for you than those which he made for you at Lyon & Healy's music store concerning which you have testified? A. I never saw Mr. Ford at any other time except during the month of September, 1897. He never made any records for me except at that one time, and he never made any records for anyone else that I ever knew of. The records made at that time are the only ones of his that I ever heard.

Q. 84. How do you know that this record marked "Douglass Exhibit 1897 Sound Record" is the identical record which you made at the high speed at Lyon & Healy's music store in September, 1897, while Mr. Ford sang to the machine or loaded the record? A. I positively identify it as being the one. I know it is. I recognize it by listening to it. I have heard it a great many times. It has been in my house all the time until about four weeks ago. I run it about three hundred times one night while testing the polyphone during October, 1898. I couldn't possibly forget it.

Q. 85. When you tested out or reproduced this Douglass Exhibit 1897 Sound Record at your house in September, 1897, who, if anyone, was present? A. My wife, two of my sisters, my mother and my brother were present and heard the record.

Q. 86. Who was present the first time you reproduced it at your house in September, 1897? A. My wife, one of my sisters

and my mother was there, the others may have been, they were at other times, if not then.

Q. 87. Do you remember any particular time when your brother Charles Douglass heard this Douglass Exhibit 1897 Sound Record reproduced at your house, and if so please state what occurred? A. I remember distinctly during the month of September, 1897, one Sunday morning lying on the sofa in the back parlor reading the paper. My brother was testing some records on the graphophone in the same room. He put on this record marked "Douglass Exhibit 1897 Sound Record" just after testing some of the others. And as the speed of the machine was not near fast enough to reproduce the record properly I remember that it annoyed me, and I said speed it up, speed it up. He said, what did you take this record so slow for? I said the record wasn't taken slow, it is right the opposite, the record is taken fast. In the meantime he speeded up the machine as fast as it would go and was reproducing the record at the proper speed. He was greatly surprised at the results of the record and said it was by far the finest record he ever heard. He said, why don't you get that man to sing some more records for you? He makes such good ones. And I told him it wasn't because the man was such a good singer that the record was so fine. I told him that the fine reproduction was due entirely to the fact that the record was taken at a high speed, which spread out the indentations over a larger surface. After listening to the record he says there isn't enough on here, meaning by that there wasn't enough of the song recorded. I told him that that could be overcome by making a larger cylinder and reducing the speed of the machine. I told him that in that way we could get the usual amount of matter on the cylinder in addition to getting the benefit of the increased speed. He run the record over several times and was very enthusiastic over the fine reproduction.

Q. 88. You have stated that you know Mr. E. D. Easton, the President of the American Graphophone Company. Did you ever, and if so when first, explain or communicate your invention, forming the subject-matter of this interference to him, and if, at any time, state what was said by you to him in relation to it? A. The first time I explained it to Mr. E. D. Easton was in September, about the latter part, 1897. The first of August, 1897, I became manager of the Columbia Phonograph Company General, for its Chicago office, rented a store at 211 State street. About the first of September I began fitting it up. The Columbia Phonograph Company General is the selling agent of the American Graphophone Company, and Mr. E. D. Easton came to Chicago a short

time after the store was fitted up. About the latter part of September, 1897, while sitting near my desk in the back end of the store I explained to Mr. Easton that by making a larger cylinder that a very much better record could be made. And I also explained that I had made records on the small cylinder at twice the ordinary speed with very great and improved results. Mr. Easton said to me that I had no idea of what it would involve to make any thing like that special. He said the better plan would be to make improvements on the present apparatus, as the making of a different sized machine and blank or record would involve enormous expense, and much the best plan would be to work on regular lines, for anything irregular would involve such an enormous change. I told him that by making the larger cylinder a very great improvement would be the result. This matter was very fresh in my mind at that time, as it was about the time of the experiment when I made the Ford Record, and which is marked "Douglass Exhibit 1897, Sound Record."

Q. 89. What, if anything, did you tell Mr. Easton at this time about the size of the larger blank or record you proposed? A. I told him I would make a cylinder about six inches in diameter. I also told him at this time that by making this larger cylinder that I believed that it would be as loud as a man's voice.

Q. 90. Subsequent to this conversation did you ever mention in any of your letters to Mr. Easton your idea that by making the record-blank or cylinder larger a better record would result, and if so, when? A. In April, 1898, I stated in one of my letters that the larger the blank the better the record.

Q. 91. Give the date of this letter as near as you can? A. It was about April 2, 1898.

Counsel for Douglass here asks Mr. Mauro, counsel for Macdonald and the American Graphophone Company, his assignee, if he has pursuant to the notice heretofore given brought with him certain original letters specified in said notice, and further that he will now produce a letter from Leon F. Douglass to E. D. Easton, dated April 2, 1898, and containing a statement to the effect that "the larger the blank the better the record."

Counsel for Macdonald states that pursuant to the request of counsel for Douglass he brought with him some of the letters of the latter written between the dates testified in said notice or request, and that it is his purpose to produce the same, or such of them as may be deemed material, at a suitable time, probably during the cross-examination of this witness. Counsel

for Macdonald does not consider that the appropriate time has yet arrived.

Counsel for Douglass demands that the letter shall be produced now for the inspection of counsel and the witness.

Counsel for Macdonald considers the use of the word "demand" an impertinence, and has nothing further to add to his former statement.

Counsel for Douglass again requests counsel for Macdonald and for the American Graphophone Company, his assignee, to now produce said letter dated April 2, 1898, and gives notice that unless this request is complied with secondary evidence will now be given as to the contents of said letter, or so much thereof as is deemed material to the issues in this case. And that the legal consequences of a refusal to so produce the original letter are that the secondary evidence thus given because of the refusal will preclude denial of the correctness and truth of the secondary evidence.

Q. 92. Please state as best you may be able the matter contained in your original letter of April 2, 1898, to Mr. Easton which pertains to this subject? A. I have a copy of the letter in my hand.

Q. 93. Please then read from it the matter enquired about? A. The witness reads:

"In my opinion it will be better to use a large sized blank, as the larger the size of the blank the better the record."

Q. 94. In any subsequent letter to Mr. Easton did you make any further mention of this subject, and if so when? A. On April 5th, I wrote him, Mr. Easton, again, and mentioned the subject.

Counsel for Douglass requests counsel for Macdonald to state whether he has with him Mr. Douglass' letter of April 5, 1898, to Mr. E. D. Easton, and if he will now produce it in pursuance to the notice heretofore given him so to do, and notice is given that in case it is not now produced secondary evidence will be offered as to its contents.

Counsel for Macdonald makes the same reply as before, and adds that he knows of no reason, legal or otherwise, that prevents counsel for Douglass from putting in and proving any documents that are in their possession or in possession of the witness which they may deem relevant and material to this cause.

It is agreed between counsel with respect to further copies of letters regarding which it is intended to have the witness testify, that the same request of counsel for Mr. Douglass, and the same reply of counsel for Mr. Macdonald, may be understood to have been made.

Q. 95. Please state, as best you may be able, the contents of your letter of April 5, 1898, to Mr. E. D. Easton, so far as the same pertains to this subject?

A. I have a copy of my letter to Mr. Easton, dated April 5, 1898.

Q. 96. Please read from it the matter enquired about? (Witness reads):

"And the most important thing is making a larger cylinder, that is, larger diameter. If you have any of this wax at the factory, could you not send me a quantity of it, so that I could experiment in putting it on a larger base. I feel quite sure that I can overcome all difficulties that you mention. I believe one of the most important things of the whole affair is to make the cylinder larger. If they can send me five or ten pounds of this wax, so that I will have plenty to experiment with, I shall be very glad to follow along this line."

Q. 97. Do you remember of ever, in any of your letters or communications to Mr. Easton, mentioning or suggesting any other advantage than this, of making a better record from the use of a large diameter cylinder in the talking machine, and if so what other advantage, and when did you make such suggestion? A. I made such suggestion in the letter of March 23, 1898, and the suggestion was for commercial purposes.

Q. 98. Please state, as best you may be able, the contents of your letter dated March 23, 1898, so far as the same pertains to this suggestion? A. I have before me a copy of my letter to Mr. E. D. Easton, of March 23, 1898.

Q. 99. Please read from it the matter enquired about? (Witness reads):

"If we use paper base, we could make the cylinder six inches in diameter and either six or twelve inches long, if we wish, so that you could put from five to 10,000 words on a blank."

Q. 100. Did you mail the original letters of April 2, 1898, April 5, 1898, and March 23, 1898, to the copies of which you have referred in making your above answers to Mr. Easton? A. The original letters were mailed to Mr. Easton.

Q. 101. Do you have replies from E. D. Easton acknowledging the receipt of your said letters of April 2d, April 5th and March 23, 1898, and if so please produce the same? A. I have the replies to these letters, and I here produce them.

Q. 102. Do you know Mr. E. D. Easton's signature? A. I do. I have seen him write it.

Q. 103. Please look at the letter beginning:

"Dear Mr. Douglass: I have your two letters of April 2nd," and which is evidently erroneously dated April 2nd, 1898; and the one dated April 8th, 1898, and beginning:

"Your three letters of April 5th at hand." And the one dated March 25th, 1898, and beginning:

"Yours of March 23rd., read with much interest;"

which you have produced as being replies to your letters of April 2nd, April 5th, and March 23rd, and state by whom they are signed? A. I have looked at the three letters described in the question and they are signed by E. D. Easton.

Q. 104. To the best of your knowledge and belief are the copies of your letters of April 2nd, 1898, April 5th, 1898, and March 23rd, 1898, to which you have referred in your above answers and which are pinned to Mr. Easton's letters above referred to as replies thereto, true and correct copies of the original letters of these dates which you mailed to Mr. Easton? A. Yes.

The copies of witness' letters referred to by him and dated respectively April 2nd, 1898, April 5th, 1898, and March 23rd, 1898, and also Mr. Easton's replies thereto dated respectively April 2nd, 1898, April 8th, 1898, and March 25th, 1898, are offered in evidence and marked "Douglass' Exhibit letters 1, 2, 3, 4, 5, and 6" respectively.

The further taking of this testimony is adjourned until Monday morning, Dec. 11th, 1899, at ten o'clock.

H. M. MUNDAY,
Notary Public.

Monday morning, December 11th, 1899. Met pursuant to adjournment. Present as before.

By consent of counsel the further examination of Mr. Douglass is suspended in order to take deposition of two witnesses residing outside of the city.

The examination of Mr. Douglass is now resumed, and Mr. Douglass continues his deposition as follows:

Present as before.

Q. 105. After explaining your invention forming the subject-matter of this interference to Mr. Easton, in September, 1897, and after again mentioning or referring to the principle of your invention in your letters of April 2nd and April 5th, 1898, to or with whom next did you mention or talk about the matter, if to anyone? A. To Edward H. Amet.

Q. 106. When and where, and state what was said by you in relation to it, as well as you can remember? A. It was in the early part of October, 1898. At this time, October 1st, I began putting the polyphone on the market, and I showed the polyphone to Mr. Amet. Mr. Amet, after listening to it, thought it was very good, and said he did not think there would ever be anything come out that would go ahead of the polyphone which he had just heard. I then explained to him that by making a large cylinder, about six inches in diameter, that I could get a reproduction about as loud as the man's voice, and explained to him that I wanted to make a machine of this kind as soon as the patents would allow me to. This conversation was at the office of the Polyphone Company, 107 Madison street, Chicago.

Q. 107. When did you next see Mr. Amet, or mention the matter to him? A. In the middle of October I went to New York, and came back about the latter part of October. I saw Mr. Amet again and told him that I had seen a machine while in the east with a six-inch cylinder that I had been telling him about before I went east, and that it was as loud as I had told him it would be.

Q. 108. How do you fix the date of this first conversation with Mr. Amet as being in the early part of October, 1898? A. I asked Mr. Amet to give me a testimonial on the polyphone, and I remember I showed him my polyphone, which I took to New York with me, and which I was waiting to have completed before I went east. I remember it was just finished the day he came in or the day before.

Q. 109. Are you able to fix positively the date on which you started to New York on this trip? A. I am not able to give the exact date at this time. It was about the middle of October. I know it was before this that I had the conversation with Mr. Amet first spoken of.

Q. 110. Where did you see the large cylinder machine on the trip east? A. In the factory of the American Graphophone Company, at Bridgeport, Connecticut.

Q. 111. In going to Bridgeport, where did you go from? A. From New York City.

Q. 112. How did you go, and who went with you, if any one? A. I went by train, Mr. E. D. Easton, Andrew Devine and Henry Babson went with me.

Q. 113. What, if anything occurred in relation to this invention forming the subject-matter of the interference? A. I had a talk about it with Mr. E. D. Easton.

Q. 114. State where this talk took place, what was said, who else beside yourself and Mr. E. D. Easton were present, if any one? A. We started from New York for Bridgeport about noon, too late to get our lunch before the train started, so Mr. Easton and Mr. Devine bought some sandwiches and fruit. We ate the lunch on the train—Mr. Devine and Mr. Babson sitting on one seat, Mr. Easton and myself sitting on the opposite seat, facing Mr. Devine and Mr. Babson. I said to Mr. Easton, "Why don't you make a larger cylinder for the purpose of getting a better record?" Mr. Easton said, "Do you think it would be any better?" I said, "Yes, I know it would, because I have tried it." Mr. Easton said, "How large would you make the cylinder?" I said, "Six inches in diameter." Mr. Easton said, "How loud would the record be?" I said, "About as loud as the man's voice." Mr. Easton asked if there would be any use in making the cylinder still larger. I told him I thought six inches would be as large as practicable.

Q. 115. You have stated that you saw a large cylinder talking machine at the factory of the American Graphophone Company at Bridgeport, Connecticut. When did this occur with respect to the conversation you have just related? A. About two hours later.

Q. 116. On the same day? A. Yes.

Q. 116. After arriving at the factory of the American Graphophone Company at Bridgeport, Connecticut, please state what you did and what occurred before you there saw the large cylinder talking machine, and also at the time when you there first saw it? A. When we first arrived at the factory Mr. Easton left us for a time, while Mr. Devine, Mr. Babson and myself went through the factory. When we had been through the factory we came back to a waiting-room in the offices, and waited there perhaps fifteen or twenty minutes. Mr. Easton came to where we were waiting and

asked us to go with him, as he had something for us to hear. Mr. Devine, Mr. Babson and myself followed Mr. Easton into a room where a machine was reproducing a song. The machine itself was covered up with a paper, and we could not see it. We stepped inside the door, and when Mr. Macdonald, who was in the room when we entered, went to stop the machine he knocked the paper off onto the floor. At this point Mr. Easton turned and said: "Isn't it funny that Mr. Douglass was telling me about this same thing coming up here on the train?" and I said, "I knew it would do it, because I had tried it." Mr. Macdonald started to pare off the record that was on the cylinder, and when it was pared Mr. Fisher made another record. We listened to these records three or four times.

Q. 117. When you first heard the machine reproducing, and while it was still covered up with the piece of paper, did you know what it was that was producing the result which you heard? A. I did not know what it was, as the machine was entirely covered with paper.

Q. 118. When Mr. Macdonald knocked off the piece of paper which covered the machine, at the time he went to stop the machine, what did the paper do? A. It fell on the floor.

Q. 119. Did the paper appear to have been knocked off intentionally by Mr. Macdonald? A. I think the paper was knocked off accidentally.

Q. 120. Why? A. Because I don't see any reason for having put it on there if they intended we should see the machine. He did not go to the machine and pick the paper up off the machine, as he naturally would have done if he intended to remove it.

(Recess for noon.)

Q. 121. Briefly describe this large cylinder talking machine which you saw after the paper fell off? A. The machine was substantially the same in construction as the Edison Class M phonograph, which has been on the market for a great many years, with the exception it had a large mandrel and a large cylinder on it, instead of the two and one-fourth inch cylinder used on the Edison Class M machine.

Q. 122. About when did you return to Chicago from this trip to New York? A. I arrived in Chicago about the 25th of October, 1898.

Q. 123. After returning to Chicago, about October 25, 1898, what, if anything, did you do in relation to your invention, forming the subject-matter of this interference? A. I began building a machine to hold a six-inch cylinder.

Q. 124. How did you do this, and about when was it completed? A. The first machine I made, I altered one of the ordinary graphophones so as to receive a six-inch cylinder, and this machine was finished about the 10th of November, 1898.

Q. 125. Please state particularly what you did to change one of the graphophones to receive the six-inch cylinder? A. I cut the frame of the graphophone in two, and inserted a piece, so as to throw the mandrel of the machine back far enough from the feed screw, so as to be able to swing a six-inch cylinder without touching the feed screw. I also put in some additional gear to connect the mandrel and feed screw and make up for the distance at which the mandrel had been set back, also raised the trunnion which holds the diaphragm, so that you could properly attach the diaphragm to use in connection with the larger diameter cylinder. In addition to that I put on the ordinary mandrel an additional mandrel to hold the six-inch cylinder.

Q. 126. State the size of the additional mandrel which went on the ordinary mandrel in the cylinder? A. This was a tapering mandrel, about $5\frac{1}{2}$ inches in diameter at the smaller end, and a trifle more than this at the larger end.

Q. 127. When, for the first time, did you learn that the American Graphophone Company were claiming this invention of yours, forming the subject-matter of this interference, as theirs, or that of their employe, Macdonald, and how did you learn this? A. Along about the first of December, 1898, I heard rumors to that effect, but do not know that I positively knew it until told by Mr. Brown, of the firm of Poole & Brown, some time in January, 1899.

Q. 128. When and from whom did you first hear a rumor to this effect? A. From George W. Lyle, the manager of the Columbia Phonograph Company, in Chicago, who is the selling agent of the American Graphophone Company, about the first of December, 1898.

Q. 129. Prior to this time what, if anything, occurred between you and the American Graphophone Company, in relation to their furnishing you a Graphophone Grand machine? A. About the middle of November they tried to sell me a Graphophone Grand, and wanted to charge me \$250 for it. This was the same price they charged anybody for them at that time, and I thought it very strange indeed that they wanted to charge me just as much for one as they would any ordinary retail customer. I told Mr. Easton in a letter that, under the circumstances, I did not care to buy a machine, but I was very much interested in it because it one was of my suggestions.

Q. 130. About how long was it after you had stated to the American Graphophone Company that under the circumstances you did not care to buy a Graphophone Grand machine, but that you were very much interested in the machine because it was one of your suggestions, was it that you heard a rumor through Mr. Lyle that the American Graphophone Company were claiming your invention as theirs, or that of their employe, Macdonald? A. It was about two weeks.

Q. 131. Please state what was said by you and Mr. Lyle at the time you first heard this rumor, as near as you can recollect the conversation? A. I told him that I had been building a machine and would like to get some cylinders for it, and he said to me that he had been instructed by Mr. Easton, the president of the American Graphophone Company, to tell me that I must stop making this machine at once, and if I did not do so, they would immediately sue me. Therefore I did not sell any of the machines or blank cylinders or records, but only used them for experimental purposes, and for the purpose of testing my polyphone on the large cylinder. I told Mr. Lyle at that time that the invention belonged to me, and had told Mr. Easton about it.

Q. 132. You have stated that you first made this invention forming the subject-matter of interference in 1888, and that you made subsequent demonstrations of it in 1893, again in 1894, again in 1895, again in 1896, and again in 1897, and it appears that you did not file your application for a patent until February 3, 1899. Please state why you have not put the invention into public use for profit or on sale, and why did you not sooner file your application for letters patent? A. During this entire period it was impossible for me to put the invention on sale for the reason that I understood that the American Graphophone Company patents cover the engraving of a wax cylinder. Therefore I could at no time in the past have made a large cylinder without infringing their patent. I could not use it until their patents expired, which is three years or more yet. The first time I started to do anything in this direction, they immediately notified me that I would be sued at once unless I stopped. If I had filed an application for a patent, it would have simply been running out without doing me any good. I did not understand that it was necessary to file an application for a patent, but that all that was necessary was to make a demonstration of the invention from time to time. The reason I filed an application for it at the time I did was because I understood that the American Graphophone Company was going to appropriate my invention by having Mr. Macdonald apply for a patent on it.

Q. 133. You did not then file your application for a patent until after you had already learned that the American Graphophone Company, through its employe, Macdonald, had filed an application for a patent on it? A. I did not.

Q. 134. You have stated that you could not put your invention into public use or on sale because the patents of the American Graphophone Company covered in a talking machine the making of the sound record on the wax cylinder or tablet, and that there were no large cylinders made by the American Graphophone Company on the market. Why did you not put your invention into public use and on sale, using the regular small, or two and one-fourth inch diameter cylinders or blanks that were already on the market, and which you yourself used in making many of your demonstrations of the invention?

(Objected to as stating matters to which the witness has not testified.)

A. The small two and one-fourth inch diameter cylinder would not contain sufficient matter to be entirely satisfactory to the public, though with it you can get as good a result as by the use of a larger cylinder, but it would only contain half the matter. It would be only putting out the invention in a half sort of a way, and I always thought the right way and the best way was to make a larger diameter cylinder, which would contain the same amount of matter as the small cylinder at the slow speed of 120 revolutions per minute, and would give the great improvement of the increased surface speed. Further than this, a great many of the spring motor talking machines on the market would not run fast enough to double the amount of speed of their ordinary speed, 120 revolutions, and therefore you could not get the full benefit of the invention in these machines.

Q. 135. How do you fix the date as being in the fall and winter of 1888, when you made your experiments at Grand Island, in the presence of Mr. King, Mr. Houck and Mr. Klenck? A. It was on the occasion of my first trip to Chicago. I had ever made that I stopped off in Omaha and heard the Edison phonograph. Mr. King came to Chicago with me, and I remember that his sister graduated from the High School that year, and while in Omaha we had been instructed to match some silk for her graduating dress, and further, the young lady who went to work for me in the office about two weeks before I came to Chicago, has told me that she went to work for me in the year 1888. To the best of my recollection it was in 1888.

Q. 137. When did you leave Grand Island, and where did

you then go to live? A. About the first of September, 1890, I came to Chicago to live.

Q. 138. After 1890, did you ever live again in Grand Island? A. No, I lived in Chicago ever since I came here, with the exception of about three months, when I was in Washington, D. C.

Q. 139. How are you able to fix the date of your first experiment, use or demonstration of this invention at Mr. Leachman's house, as being in October or the fall of 1893? A. I remember that it was very near Chicago day, which was October 9, 1893, at the World's Fair. I further remember it being about the 1st of October, because it was about the time I rented a store at 98 Madison street, and started into business under the name of The Chicago Talking Machine Company.

Q. 140. How do you fix the date of your next or disk machine experiment? A. I remember that Mr. Dickinson, who was then President of the Company—The Chicago Talking Machine Company, went to Europe in July, 1894. He came back about the first part of September, 1894, and stayed for about a week. He was shown the machine at this time. He then went to Europe again and stayed for a number of months.

Q. 141. How do you fix the date of your next experiment or demonstration, in which a graphophone known as the Commercial machine, or Business machine, with a blank about six inches long, was used, as being in 1895? A. I remember it was very shortly after I returned from Europe, which was about July 1, 1895.

Q. 142. How long were you connected with the Chicago Talking Machine Company? A. From about September, 1893, to August 1, 1897.

Q. 143. What did you next do, or how and by whom were you next employed after quitting the Chicago Talking Machine Company, about August 1, 1897? A. I was employed by the Columbia Phonograph Company, general, as business manager of a Chicago office, from August 1, 1897, to March 1, 1898.

Q. 144. What employment, if any, did you then enter into? A. March 1, 1898, I entered the employ of the American Graphophone Company, and stayed with them until October 1, 1898. During this period I was employed as an experimentalist.

Q. 145. Under what understanding or agreement as to ownership of inventions you might make while thus employed as experimentalist by the American Graphophone Company? A. It was with the understanding that I should assign any inventions that came out of the results of my work from March 1st until October 1, 1898, and nothing that I had made before March 1, 1898.

Q. 146. Is that understanding or agreement in writing, or evidenced by any writing, and if so, what? A. The terms of employment are found in a letter which I received from Mr. E. D. Easton.

Q. 147. While you were in the employ of the Columbia Phonograph Company, what, if any, objection did Mr. E. D. Easton make to your doing any experimenting for yourself at your house, in your own time, or out of business hours? A. Mr. Easton wrote me some letters in regard to this matter, and we had some conversation on the subject later, or in January, 1898; in a diplomatic way he told me that I could not own inventions for myself if I stayed with the Company, and I told him that he would then have to accept my resignation at once, as I certainly would not give them up. He said that would not be necessary, and asked me what I would take for them. I refused to set a price on them.

Q. 148. Have you any of Mr. Easton's original letters in relation to this matter, and copies of your letters in reply concerning the same? A. Yes.

Q. 149. Please produce them and state their dates? A. I here produce them. Their dates are as follows: Letter of E. D. Easton, dated December 8, 1897; my letter to Mr. Easton, dated December 11, 1897; Mr. Easton's letter to me dated December 13, 1897; my letter to Mr. Easton dated December 16, 1897; Mr. Easton's letter to me dated December 20, 1897; my letter to Mr. Easton dated December 22, 1897; Mr. Easton's letter to me dated January 22, 1898; Mr. Easton's letter to me dated February 3, 1898; my letter to Mr. Easton dated February 8, 1898; my letter to Mr. Easton dated February 17, 1898; my letter to Mr. Easton dated February 21, 1898, and Mr. Easton's letter to me dated February 21, 1898.

(By consent of counsel for both parties, said letters are here copied into the record, the same to be used with the same force and effect as though the originals were offered as exhibits.)

"Executive Office Columbia Phonograph Company, sole agents for the American Graphophone Company, 155, 157, 159 Broadway.

NEW YORK CITY, Dec. 8th, 1897.

DEAR MR. DOUGLASS: I noticed a reference in one of your letters lately to application for a patent. If you want to do anything in this line should it not be done through Pollok & Mauro; or, if you have any special reason for employing a

Chicago patent attorney, should not Pollok & Mauro be the Washington correspondents of that attorney?

We want all of the patents that are good; and you need not be at any expense in any patent matter, unless it be something you have submitted to us and we have declined to proceed with.

Yours truly,

E. D. EASTON.

MR. LEON F. DOUGLASS,

Chicago Office."

Dec. 11th, 1897.

MY DEAR MR. EASTON: Replying to yours of Dec. 8th, in regard to my application for patent, will say, that I have made quite a number in the last year, and have a lot more that I expect to work out when I get an opportunity. I think that a number of them will be of more than ordinary interest to you when you know what they are. When I see you again I will talk over the matter with you for allowing Pollok & Mauro to make the applications for me. I have an elegant lot of tools at home, nearly a thousand dollars worth. I have also employed a watchmaker to work out some ideas that I have, and he comes to the house Sundays, and I tell him what to do for the next week, so you see that I have a regular little laboratory of my own now. It is probably needless to say that all my work is in the talking machine business. I am so thoroughly united to the work that it would be impossible for me to hardly think of anything else. I wish you could see the little room I have fixed up. I think there will probably be a number of things that comes out of there that will be of interest to you, at least I hope there will. There has always been a great many things that I wanted to work up at different times, but model work is so expensive that I never felt that I could do so, until recently the idea occurred to me that I might employ a man by the week, and as this would only cost me about ten dollars a week, where if I had a model maker it would cost me thirty dollars a week. As I enjoy the work more than I would going to the theatres, or spending my time on Sundays going visiting as other people do, I thought I might be able to get up something that would pay for the expense more, as well as learning a great deal at the same time. To a certain extent combine business with pleasure. I suppose it is needless to say that I do not give these things any attention during business hours.

I took it for granted that the Company would not object to my entertaining myself at home in this way, than they would if I was visiting with friends, or going to the theatre.

I hope that you will, as you say, be able to come out before long to see us, and we will certainly be very happy to see you here.

With kindest regards, I remain,

Yours very truly, Mgr. L. F. D."

"Columbia Phonograph Company, 1155, 1157, 1159, Broadway,

NEW YORK CITY, December 13, 1897.

DEAR MR. DOUGLASS: Yours of December 11th at hand. I do not doubt you are doing very interesting experimental work, and certainly expect your work to materialize in something good. Shall be glad to hear from you at any time on this subject.

Do you understand your experimental work to be outside of your employment by this company; or do you understand the experimental work you do at home or elsewhere to be for the benefit of the company? I have so much confidence in your ability in this direction that a clear understanding seems important. Nobody now in the service of the company has regular hours, and every moment of the waking hours of most of our people is devoted to the service of the company and many dream about business while asleep.

I don't know that there is any misunderstanding on this subject, but the latter part of your letter does not seem entirely clear.

Yours very truly,

E. D. EASTON.

Mr. Leon F. Douglass, Chicago, Ill."

DEC. 16, 1897.

Mr. E. D. Easton, 1159 Broadway, N. Y.

MY DEAR MR. EASTON: Replying to yours of the 13th, would say that I am very much pleased to know of your confidence in my ability as an experimenter. If you have any confidence at all it is more than I have in myself. The company however, could not expect me to give them the benefit of the experimental work I am now doing, when you consider

the fact that they pay me considerably less than half what I used to make with the old company, and the old company did not ask it, and besides having bought so expensive an outfit of tools and pay my mechanic ten dollars a week and his board out of my own pocket. I, of course, have no hours myself, and am willing to work any time day and night. I often come down at night and Sundays when they telephone me, to get out orders, or talk with customers. I study at home how to improve the business, almost as much as at the office. I don't think that I have gone to sleep a night hardly in the last seven years that I am not thinking of the graphophone business. One of the reasons that I have been taking out patents is because people so easily forget that I was the originator of an idea. After a year's time they almost forget it, and after two years they argue the question, three years they swear that I am not, and I think in five years they would laugh at me for even suggesting the idea that I was the originator. I think the first idea is what is most valuable, because any one can get up a machine if they are told what to do. I would, of course, let you know before I would dispose of any of my patents. I have one patent if it issues, which would be worth thousands of dollars. I am sure we can arrange everything satisfactory if you want me to experiment for the company in the future. I shall be glad to do so at the company's expense.

I shall be glad to talk over the matter with you when you come out. I have not written you anything regarding inventions the last year, I thought probably you were no longer interested in them. With kindest regards I remain,

Yours very truly,

Mgr. L. F. D.

"Executive Office, Columbia Phonograph Company, 1155, 1157, 1159 Broadway,

NEW YORK CITY, December 20, 1897.

DEAR MR. DOUGLASS: Yours of December 16th relative to experimental work at hand and contents carefully noted.

It seems evident that we should have a conference on this subject at an early date, and I will ask you to come east for the purpose very soon; will fix date later. Every man occupying a conspicuous position in the enterprise thinks of business during his entire waking hours and dreams of it when he goes to sleep; and all this invariably, for the compensation he is receiving at the time, without any thought of his work in-

uring to his benefit in the form of extras or special compensation. It is evident it would not do for part of your efforts to be directed toward office duties and the remainder toward experimental work, the results of which you were to sell either to us or others; for, in this event we should never know where we stood or what to account on.

It will be easy to arrange the whole matter in a satisfactory form to us both, and this should be done as soon as possible.

With kind regards and best holiday wishes.

Yours very truly,

E. D. EASTON."

Dec. 22, 1897.

DEAR MR. EASTON: Replying to yours of December 20 in regard to experimental work, shall say I shall be glad to come to New York and talk over matters at any time you wish. In the meantime I have stopped experimental work and have no doubt everything can be arranged satisfactorily.

With kindest regards I remain

Yours very truly."

"Columbia Phonograph Company, Bowling Green Building, 5, 7, 9, 11, Broadway.

NEW YORK CITY, Jan. 22nd, 1898.

MY DEAR MR. DOUGLASS:—I am very sorry indeed to learn from yours of January 20th that your wife and mother are both ill. Hope before this letter reaches you both will be well again. Please remember me very cordially to them. Meantime you need not think anything about new matters until your mind is entirely at rest on the more important subjects of the health of those so dear to you. I shall expect to hear from you as soon as everything is all right.

With kindest regards,

Yours very truly,

E. D. EASTON.

Mr. Leon F. Douglass, Chicago, Ill."

Bowling Green Building, 5, 7, 9, 11, Broadway,

NEW YORK CITY, Feb. 3, 1898.

DEAR MR. DOUGLASS:—In yours of January 22nd, you leave to my decision, the question as to whether or not you shall do

experimental work. I am sure this is the work nearest your heart, and therefore decide that you shall do it. In such work there must, of course, be failures; and all we expect is that you shall do your best. As to compensation, you will start with a salary of five thousand dollars per year; and you may be sure if your work entitles you to promotion, it will come, as it does to everybody else in our service who deserves well.

As to your residence in Chicago, it will be all right for you to continue there. Should a change ever be necessary, we can take it up as a separate subject. As to what you need in the way of special equipment, that can also be a matter of consideration in detail. Any necessary expenditures in connection with your work, we would expect to bear. The contract of employment will be that the American Graphophone Company shall own the results of your work; and with all applications for patents there shall be assignments to the Company.

I believe in view of all the circumstances, that it will be better for you and for the Company to have you go into this field.

Further details will be arranged later; meantime go ahead as you have been doing.

Yours truly,
E. D. EASTON,
President."

"FEB. 8th, 1898.

MY DEAR MR. EASTON: I have received your three letters of February 3rd. My wife and mother are feeling so very badly, I should like very much to let the whole matter rest as per your kind suggestion of January 22nd, until they are improved. My mother's illness has become very serious, and she was very low all day yesterday, and we are to-day going to have a consultation of the doctors.

I feel sure that you will excuse this delay, and as soon as everything is all right at home again, I will write you fully in regard to your letters of February 3rd, immediately.

With very kindest regards, I remain,

Yours very truly,
L. F. D."

"FEB. 17, 1898.

"Mr. E. D. Easton,

Prest. American Graphophone Co., New York.

"MY DEAR MR. EASTON: Replying to your letter of February 3rd in regard to the experimental work, I don't believe it is the best thing for me personally, as you know we are all likely to be a little selfish in our own interest. If I start in on a salary of \$5,000 a year on the experimental work, it would be about \$1,500 a year less than I am now receiving as manager, and it is practically a sure thing that the position of manager will pay at least \$8,000 or \$9,000 a year inside of six months, while in the experimental work it is all guesswork. If, however, you have fully decided that I shall do the experimental work, the best thing to do is to go at the work as if there was no such thing as failure, and at least give it a good trial.

"Do you wish to buy the tools at the factory and have them shipped, or have me buy them here? Do you want me to have the laboratory here in this building? I do not know what your plans are, but the things suggested herein, seem to me, are the first things to be settled, and as soon as we get the matter started and I get an idea of about what your wishes are in the matter, I will go ahead and send in suggestions.

"Yours, very truly,
"L. F. D."

"FEB. 21, 1898.

"MY DEAR MR. EASTON: The following is a list of machinery that I think we will need in doing the experimental work, which I believe would be useful in the factory if it was not longer needed in the experimental work for any reason:

"One Brown & Sharp Universal Milling Machine, No. 2. With this machine, you can not only do gear-cutting, but it can also be used for almost anything that you would use a planer or shaver for.

"One 14-inch Sensitive Drill, with chuck; one 14-inch Engine Lathe, compound rest, with tapering attachment; two Universal Chucks, one six inches and the other twelve or fourteen inches. We would also need the shafting, hangers, etc., to run these machines. We would also need a large number of small tools, but they can probably be bought here as well as at the factory. To run this machinery I think it would be best for us to have about a two-horse-power electric motor.

I write about these first, because it may take you two or three weeks to get them, and almost nothing can be done until they arrive. On this account, would it not be well to make the change about the 15th of March instead of the 1st of March, as I would have almost nothing to do until this machinery arrives, and I should much prefer to be busy than laying around for it to come.

"There are two rooms on the fourth floor of this building that we can use, if you wish to have the laboratory here in this building. With your permission, if you decide to use these, I should like to have one of them fitted up for a private office; the other room, which is considerably larger, to be used for the machine-room. I am making these suggestions now, so that there will be no delay in starting off on the new work.

"With kindest regards, I remain

"Yours, very truly,

"L. F. D."

"Columbia Phonograph Company, Bowling Green Building,
5, 7, 9 & 11 Broadway,

NEW YORK CITY, February 21, 1898.

DEAR MR. DOUGLASS: I have yours of February 17th. Your new duties will begin March 1st, and you will be in the service of and paid by the American Graphophone Company. Recommendations from you for the good of the service in any direction, either mechanically or as to care of office, sale of goods, &c., will be in order and valued.

Unless you know of some reason to the contrary, I would advise that you have your laboratory at home, or at least in some other place than the office of the company.

As to tools, give us a recommendation covering what you think would be your needs, with estimate of cost.

Yours truly,

E. D. EASTON,

per I. L. T.,

President.

Q. 150. Which, if any, of these letters show the terms of your employment as experimentalist for the American Graphophone Company when you entered their employ? A. The letter dated February 3rd, 1898.

Q. 151. Which, if any, of these letters shows or states the date when your employment as experimentalist for the American

Graphophone Company began? A. The letter dated February 21, 1898, signed by E. D. Easton, per I. L. T., President.

Q. 152. During the period of your employment by the American Graphophone Company from March 1st, 1898, to October 1st, 1898, what, if any, experiments or other thing did you make or do in relation to your invention forming the subject-matter of this interference? A. I did not make any experiments, or do anything with it during that time.

Q. 153. Did you do any work, in relation to it, at all, during this period, while you were in the employ of the American Graphophone Company, as experimentalist, from March 1st, 1898, to October 1st, 1898? A. No.

Q. 154. The interference in this case was declared July 1, 1899, as appears from the official letter from the Patent Office. Prior to this date, what, if any, suit had been brought against you, in respect to the title of your invention, and state when the suit was brought? A. Suit was brought against me to compel me to transfer my application for a patent on my invention of what is commonly known as the "Graphophone Grand," or concert phonograph, to the American Graphophone Company. The suit was begun about June 5, 1899.

Q. 155. On what ground was that suit based? A. The bill of complaint charged me with having made this invention, while in the employ of the American Graphophone Company, as an experimentalist.

(Counsel for McDonald now objects to the question as calling for, and the answer as given as giving secondary evidence, and also objects to the question as immaterial.)

Q. 156. In other words, the bill of complaint is based upon the theory that your invention, forming the subject-matter of interference in this case, and which is shown and described in your application involved in this interference, was made and experimented upon by you, during the period of your employment as experimentalist for the American Graphophone Company, and that, therefore, the title and ownership of your application for patent involved in this interference, came under the terms of your agreement of employment as experimentalist, to which you have referred; is that correct?

(Objected to on the same grounds as before, and on the further ground that the witness' views, as to the theory of the bill of complaint, is incompetent.)

A. That is as I understand it.

Q. 157. After you had learned that the American Graphophone Company were claiming this invention of yours as their own, through their employe, Macdonald, and prior to the filing of your application, was anything done by the American Graphophone Company to delay the filing of your application? A. Yes, Mr. Brown, of the firm of Poole & Brown, who, I understand, is of counsel for the American Graphophone Company, came to me and tried to get me not to file my application.

Q. 158. Prior to the filing of your application, did the American Graphophone Company, its agents or attorneys, make any representations to you, in regard to their ownership of your invention, by reason of its being mentioned in some of your letters, written by you, to the American Graphophone Company or to Mr. Easton, during the period of your employment as experimentalist? A. Yes, Mr. Brown told me that he thought that they would have a legal right to it, because I had mentioned it in one of my letters during this period.

The further taking of this deposition is adjourned until Tuesday, December 12th, 1899, at ten o'clock A. M.

H. M. MUNDAY,
Notary Public.

Tuesday, December 12, 1899. Met pursuant to adjournment. Present as before.

Q. 159. In the suit to which you have referred, brought by the American Graphophone Company against you to compel you to assign your application for patent involved in this interference, on the ground that you had made the invention while in the employ of that company as experimentalist, Mr. E. D. Easton has testified in taking proofs on behalf of the complainant in that case, that he had information from Messrs. Poole & Brown, among others, and has stated in his testimony, as follows:

"I had information that Mr. Douglass claimed to be such inventor; that he claimed to have made the invention while in the service of the American Graphophone Company; that he admitted the invention, if any, was ours; that he intended to assign the invention or the application; that all that he wanted was the credit for making it. I had information that he based his claim in part upon an official communication made to me in the course of his work as an experimentalist."

Did you ever claim to Messrs. Poole or Brown, or to any other representative of the American Graphophone Company, or anybody else, that you made this invention while in the service of the American Graphophone Company?

(Objected to as irrelevant, immaterial and incompetent; as containing statements as to matters regarding which there is no evidence in this cause, which statements in some important particulars are not accurate and motion will be made to strike out of this record any testimony wherein it is attempted to rebut testimony given in the suit referred to.)

A. I did not.

Q. 160. Did you ever admit to Messrs. Poole or Brown, or any one else, that your invention belonged to the American Graphophone Company? A. No.

Q. 161. Did you ever say to Messrs. Poole or Brown that you intended to assign the invention or application to the American Graphophone Company? A. No.

Q. 162. Did you ever say to Messrs. Poole or Brown, or to any one else, that all you wanted was the credit for making the invention? A. No.

Q. 163. In this talk that you had with Mr. Brown on behalf of the American Graphophone Company, what, if any, assurance did you receive that no advantage should be taken of anything said at the conference? A. I asked Mr. Brown if the talk we had would be confidential, that no use would be made against me of any talk on this subject, and Mr. Brown assured me that the talk would be confidential.

Q. 164. Now that Mr. Easton, in his testimony in this title suit between his company and you has pretended to state information learned from you in your conversation with Mr. Brown, it seems proper for you to state exactly what that conversation between you and Mr. Brown was, and you will now please do so, to the best of your recollection?

(The statements of counsel embodied in the foregoing question are objected to as grossly improper and as forming no necessary part of or introduction to the question itself. The latter is not objected to.)

A. Mr. Brown came to me and said he understood I was about to file an application for a patent on my invention, and told me that he had been sent by Mr. Mauro. He wanted to see if some arrange-

ment could not be made with me in regard to the matter. I asked him if our talk on the subject was confidential, and he said it was. I told him I had no proposition to make, but was willing to listen to one. He believed some satisfactory arrangement could be made. He said that he understood that I had written some letters on the subject to Mr. Easton, while an experimentalist for the American Graphophone Company. I told him that was true. He wanted to know if I didn't think that they had a right to the invention on this account. I told him I did not see where they would, because I had a record in my house made on that principle a long time before I went to work for the American Graphophone Company; that I had made the invention before I went to work for the American Graphophone Company. I did tell him that if he could show me where I was under any moral obligation to give the American Graphophone Company the invention because I had spoken of it in a letter I would do so, but that I did not feel under any moral obligation, as they had ignored me in the matter entirely. He asked me if I did not think they had a legal right to it, and I told him that it would not be necessary to have any legal right to it, if there was any moral right why I should transfer it, I would do so, but I told him that before I would consider any of those matters that the American Graphophone Company would have to show their good faith by withdrawing the application of Macdonald. He asked me to hold my application for a few days until he could communicate with Mr. Mauro, and I promised to do so. I told him, however, he had better get a telegraphic reply to the letter which he told me he was going to write, for the reason I was all ready to go to California. He said he would do so. A couple of days later he came up with a message from Mr. Mauro, and again tried to get me to hold my application, and said that he believed satisfactory arrangements would be made with me. I told him I could not hold the application any longer on such vague assurance, and as I remember he telegraphed to Mr. Mauro and received a reply from him the same day. The second telegram gave no assurance that was satisfactory, and I told him I would not wait any longer, so my application was sent in.

Q. 165. Have you ever put your invention forming the subject-matter of this interference into public use, and if so, when first and how? A. I put it into public use two months ago, by making a record on a 2½-inch cylinder, at a high rate of speed, of about 240 revolutions per minute.

Q. 166. Under what name are these high-speed records known on the market? A. "Jumbo Volume Records."

Q. 167. About how long have you been selling them? A. About two months.

Q. Why did you not put your invention into public use in this way by making high-speed records on the ordinary 2½-inch cylinder sooner, and why did you begin to do it? A. It is not a very satisfactory way to do, because the cylinder does not hold sufficient matter. I thought much the best plan would be to make a larger diameter cylinder, so that you could get the usual amount on. I do it now because it is the only way I know of in which I can get any benefit from my invention until the patents of the American Graphophone Company expire.

Q. 169. You have stated that Mr. Leachman, in giving his testimony about your 1895 experiment, in which a commercial or business machine or graphophone with a long six-inch blank was used made a mistake as to the particular kind of business machine which was used in this 1895 experiment, confounding it with the business or commercial machine used in a later experiment made in July, 1897. Please state briefly, or indicate, what this July, 1897, experiment was, or related to? A. The experiment made in July, 1897, was a machine in which I made two or three records on a single cylinder, and reproduced them simultaneously.

Q. 170. In this experiment two or more records were made simultaneously? A. Yes.

Q. 171. You have stated that you made records by use of your invention forming the subject-matter of this interference in 1893, again in 1894, again in 1895, and again in 1896. Have you any of those records now? A. No.

Q. 172. Have you searched for them, and if so, with what result? A. The records made in this way were taken to my house, and I frequently get from fifty to one hundred records at my house. After they have been used a number of months I usually send to the house for them, have them all pared off, and new records made on the blank cylinders. We sometimes get short of blanks, and so gather up the blanks in this way and use them again. I have searched for them, but could not find them.

Q. 173. Then, as I understand you, the record marked "Douglass Exhibit 1897 Sound Record" is the only one of the records which you have made by the use of your invention forming the subject-matter of this interference, which you have preserved or been able to find?

(Objected to as leading.)

A. It is the only record I can find.

Q. 174. What recorder was used in making this Douglass Exhibit 1897 Sound Record? A. The common stock recorder, which went with the graphophone at that time.

Q. 175. What, if any, change or improvement in recorders has been made or come into common use since that time? A. There has been a great improvement in recorders, and the recorder that is made now makes a record about twice as loud as the recorder used to make the record marked "Douglass Exhibit 1897 Sound Record." The recorder that I used in 1897 clamps the glass diaphragm in between two rubber gaskets, while the recorder that is used now the glass is not clamped in at all, but is laid on the gasket of rubber and waxed on, which gives the diaphragm much freer vibration. The new recorder is also very much lighter than the old one, a much better method is used for holding the sapphire recording point and the sapphire recording point itself is made smaller than the old one, and requires less power to make it record deeper than the old one on account of its being smaller.

Q. 176. By what name are these new recorders known in the trade, if they have any special name? A. Many people call them "The Featherweight Recorder." I don't know that they have any special name.

Q. 177. What recorders are commonly or generally used in making the large cylinder records for concert phonographs or "Graphophone Grands"? A. The recorder that I have termed "The Featherweight Recorder" is used by the American Graphophone Company. I believe also by the makers of the concert phonograph.

Q. 178. If the new recorder, instead of the old recorder, had been used in making the Douglass Exhibit 1897 Sound Record, what effect, if any, would this change have had upon the loudness and quality of the record? A. By the use of the new recorder and running the cylinder at the same speed at which this record was made the record would be as loud and of as good quality as the record made on the Graphophone Grand or Concert Phonograph.

Q. 179. Has your experience in the practical operation of talking machines been such as to enable you to tell by listening to the reproduction of a record what its condition is with respect to wear? A. Yes.

Q. 180. State from your examination and listening to the reproduction of the Douglass 1897 Sound Record what is the condition of this with respect to wear? A. The record has been worn a great deal.

Q. 181. You have stated that about December 1, 1898, you first heard a rumor or intimation that the American Graphophone Company were claiming or intending to claim this invention of yours as their own through their employe Macdonald, and that about the middle of November, 1898, you learned that the American Graphophone Company would ask you \$250, or the same price as others, for the Graphophone Grand machine. Have you any letters from Mr. E. D. Easton written subsequent to your visit to the American Graphophone Company's factory at Bridgeport, Connecticut, in October, 1898, and showing the attitude of Mr. Easton and his company in respect to your invention which forms the subject-matter of this interference, and if so, please produce them, together with copies of your letters to Mr. Easton in reply?

(Counsel for Macdonald objects to the recital preceding the question, and objects to the inferences of counsel as to what is shown by such letters, which will speak for themselves.)

A. I have some such letters and here produce them. They are as follows: Letters of E. D. Easton of October 21, 1898, October 22, 1898, October 26, 1898, November 3, 1898, November 4, 1898, November 7, 1898, November 9, 1898, and November 14, 1898, a copy of one letter written by me to Mr. Easton and signed the Polyphone Company, and dated November 7, 1898, and a copy of my letter to Mr. Easton, dated November 16, 1898.

By consent said letters and copies are here transcribed into the record to be used with the same force and effect as though the originals were offered in evidence.

"EXECUTIVE OFFICES.

Columbia Phonograph Company, Bowling Green Offices.
5, 7, 9 and 11 Broadway.

NEW YORK CITY, October 21, 1898.

Dear Mr. Douglass:

I know you will be interested to learn that Mr. Macdonald has already designed what he thinks will be a fine Polyphone attachment; that the cost of building the model will be small; that it will take only a short time, and that we may soon have something to show you along the line indicated.

The new attachment will require no screw-holes. It will be

set on with a thumb-screw; any one can attach it or detach it quickly.

Yours very truly,
E. D. EASTON.

Mr. L. F. Douglass, 107 Madison St., Chicago, Illinois."

"BOWLING GREEN OFFICES, 6, 7, 9 AND 11.

NEW YORK CITY, Oct. 22, 1898.

Dear Mr. Douglass:

Macdonald was here yesterday morning. I could not get on the track of the Polyphone until afternoon, and then located it with Russell Hunting, who said he had instructed us to deliver it here after he was through with it. I had messengers on the lookout for him all over town. He and the machine arrived in the middle of the afternoon. Did you give it to him to deliver to me, or how did he get possession of it? My understanding was it would be left at the uptown office.

I sent you a telegram on the Pennsylvania limited train, but it was returned undelivered from Pittsburg. Mr. Macdonald is very much pleased with his Polyphone design, and as soon as it can be reduced to model, and is found satisfactory, you shall see it. We have some interesting "Jumbo" plans, also.

The gramophone bill was filed to-day.

Hope you found all well at home, and have recovered from the fatigue and excitement of the New York visit.

Yours very truly,
E. D. EASTON.

Mr. L. F. Douglass, 107 Madison St., Chicago, Illinois."

"BOWLING GREEN OFFICES, 5, 7, 9 & 11 BROADWAY.

NEW YORK CITY, Oct. 26, 1898.

Dear Mr. Douglass:

Your telegram was duly received. I visited the factory yesterday and saw the drawings of the new Polyphone attachment. A model will be made at the earliest possible moment. It looks as if Mr. Macdonald had been very successful in the design. Will let you know as soon as the model is ready.

Yours very truly,
E. D. EASTON.

Mr. L. F. Douglass, 107 Madison St., Chicago, Illinois."

"BOWLING GREEN OFFICES, 5, 7, 9 & 11 BROADWAY.

NEW YORK CITY, Nov. 3, 1898.

Dear Mr. Douglass:

Your telegram of yesterday came during my absence. I telephoned the factory, and was told that the model should be ready early next week. Will keep the matter in mind, and push it along by every means in my power.

Sincerely yours,
E. D. EASTON.

Mr. Leon F. Douglass, 107 Madison Street, Chicago, Illinois."

"BOWLING GREEN OFFICES, 5, 7, 9 & 11 BROADWAY.

NEW YORK CITY, Nov. 4, 1898.

Dear Mr. Douglass:

Cannot much time be saved, if, when the Polyphone model is ready, you come right on and consider it here?

Yours very truly,
E. D. EASTON.

Mr. L. F. Douglass, 107 Madison St., Chicago, Illinois."

"November 7th, 1898.

E. D. Easton, New York, N. Y.

MY DEAR MR. EASTON: Replying to yours of the 4th, would say that I just telegraphed you that I could not come east immediately, and asking you to please rush the sale of the model and prices, and I would try and come later. Since sending the message, however, Mr. Lyle has been here and told me of a letter he has received in regard to the same matter; he also mentioned the fact that it might be necessary to make some changes in the model or something of that sort. This had not occurred to me. Of course, the most important thing we have on hand is the getting out this model. I would, of course, come out and let everything else go if it were necessary. However, I think the best plan would be, if you can send down this model as quickly as possible with prices, and if there then seems to be any need of my coming I will of course bring the model with me and come on the first train. If, however, we can get a tem-

porary start without it being necessary for me to come, I should much prefer to do it in that way, as I have an awful lot to do here, and I will come on as soon as I can later, and we can settle up any further details that would be necessary. You can readily understand how busy we are when I say two weeks ago one typewriter operator worked only about two hours a day to get out all the mail; at the present time we have three typewriter operators all working as rapidly as possible, and we are still several hundred letters behind in the correspondence. I am very anxiously waiting for the Macdonald model and hope that it has been shipped before this letter reaches you.

With kindest regards I remain,

Yours truly,
THE POLYPHONE CO.

"BOWLING GREEN OFFICES, 5, 7, 9 & 11 BROADWAY.

NEW YORK CITY, Nov. 7, 1898.

Dear Mr. Douglass:

In reply to yours of November 5th, would say that I am following up the Polyphone every day, and sometimes several times a day. As soon as the model is tested, and found to work satisfactorily, you certainly ought to come on here and arrange for details of manufacture. Will telegraph you and give you a chance to say.

There is another matter which you could take up in the same connection, in regard to Jumbo.

Of course the interest of our graphophone friends in the Polyphone is increased by the understanding that, in no event, is it to go on the phonograph.

Sincerely yours,
E. D. EASTON.

Mr. Leon F. Douglass, 107 Madison St., Chicago, Illinois."

"BOWLING GREEN OFFICES, 5, 7, 9 & 11 BROADWAY.

NEW YORK CITY, Nov. 9, 1898.

Dear Mr. Douglass:

I have yours of November 7th, and congratulate you on the interest shown in the Polyphone. I saw the model yesterday. It is nearly finished, and seems very promising. As soon as it

is completed, and found, on test, to work satisfactorily, will communicate with you by wire, and you can say whether you will come on, or have the model forwarded.

I have written Mr. Lyle by same mail, asking him to give you a message about "Jumbo."

Yours very truly,
E. D. EASTON.

Mr. Leon F. Douglass, 107 Madison St., Chicago, Illinois."

"BOWLING GREEN OFFICES, 5, 7, 9 & 11 BROADWAY.

NEW YORK CITY, Nov. 14, 1898.

Dear Mr. Douglass:

Yours of November 12th just received. Mr. Macdonald is expecting, every day, to be able to test the new polyphone attachment. He is having the model pressed. I will notify you as soon as a successful trial has been made and then, if you do not feel like coming on, the attachment can be forwarded.

When we talked about the matter, you did not qualify your promise as to confining the attachment exclusively to the graphophone, but said you would do it. Of course we must not keep you waiting a single moment unnecessarily and we would not do this, on our account, as well as on yours.

As I have written Mr. Lyle, it was not our intention to try to get an order from you for a "Graphophone Grand," but only to give you notice that orders were being taken, and an opportunity to do anything you thought best. We are making no promises as to maintenance of price, nor as to how many machines are going to be turned out. All we say is that those who place the first orders will get the first machines. One man has already offered to corner the entire product, if we will allow him to do so, to which we have responded that we will take his orders for such number as he chooses to place, and fill the orders as the machines come out.

We are going to make as many as we can, but for some weeks or months the product will be small, and the men who get the first will realize accordingly. They can, if they have them, sell them for what they can get, and use them in what seems the most profitable way. Your connection with the enterprise has been so long and intimate that we do not want to give you any reason to think we had forgotten you in this matter. If you reach the conclusion that you want one or more machines, you

had better have Mr. Lyle telegraph, and not depend upon the mail.

Later, of course, you and all others can get whatever we have on regular terms. For the present everything is irregular and special, the only points being those already stated.

We will press the polyphone, and give you quick information as to any developments.

Yours very truly,
E. D. EASTON.

Mr. L. F. Douglass, Chicago, Ill."

"November 16, 1898.

Mr. E. D. Easton, 11 Broadway, New York City, N. Y.

DEAR MR. EASTON: Yours of the 14th received. In reply would say that when I was talking with you in New York, I said there was no objection to making an exclusive deal on the Graphophone, but we did not talk over the details as there was no model completed and we could not do so then. I expected the Macdonald model in a few days, but of course you can never tell about how soon experimental work will be completed.

In the meantime, I was under heavy expense besides my own time, and I had to do something until we could get a model and talk over the details.

Under these circumstances, I hardly feel like ordering a Graphophone Grand. I feel interested in the machine, however, because it is one of my suggestions.

I telegraphed you this morning that I have a splendid working attachment. I tried it last night at the house, and out of about 250 trials it failed to track only twice. You can jar the machine and throw the diaphragm out of the adjustment, but the attachment puts them right in place again, but I have no doubt that you could make them up better and cheaper than I can. A sample machine will be forwarded to you by Saturday or Monday. I should be very glad to have a price for making them.

Mr. Lyle came over and took lunch with me to-day and told me he had received a telegraph message from you, saying that the Macdonald model did not work well. Perhaps we can get a combination between the two that will be better than mine. You may be sure that we will now make the Polyphone business boom.

With kindest regards, I remain,

Yours truly."

Q. 182. I notice in Mr. Easton's letter of October 22, 1898, the expression "We have some interesting Jumbo plans, also." What do you understand "Jumbo" to refer to? A. "Jumbo" is the name I understood to mean "Graphophone Grand," and the plans I understood that he wanted to make some arrangements with me in regard to it. I supposed of course that he would recognize me as the inventor.

Q. 183. In Mr. Easton's letters, or many of them, reference is made to a design of a polyphone attachment of Mr. Macdonald's, and also to the polyphone model. Please explain what this refers to? A. Mr. Easton wanted to make the polyphone and get me not to put it into the phonograph, but confine it exclusively to the graphophone. He was having Mr. Macdonald make up a design of the polyphone in the way he thought it ought to be done.

Q. 184. Did you understand from this that there was any intention on the part of the American Graphophone Company to claim that Macdonald was the inventor of the polyphone? A. No, I had no idea that he would.

Q. 185. In Mr. Easton's letter of November 7, 1898, the following statement is made:

"In reply to yours of November 5th would say that I am following up the polyphone every day, and sometimes several times a day. As soon as the model is tested and found to work satisfactorily, you certainly ought to come on here and arrange for the details of manufacture. Will telegraph you and give you a chance to say.

"There is another matter which you could take up in the same connection regarding Jumbo."

What did you understand "Jumbo" to refer to in this connection? A. I understood it to refer to the Graphophone Grand.

Q. 186. Did you understand from this letter that there was any intention up to this time, on the part of the American Graphophone Company, to claim that Mr. Macdonald, or any one else but yourself, was the inventor of either the polyphone or Jumbo, or that your rights as inventor of both the polyphone and Jumbo were not to be fully recognized? A. On the contrary, I thought from this letter that they did intend to recognize my right to both.

Q. 187. Did you finally make the arrangement with the American Graphophone Company for the manufacture of the polyphone attachment by which the polyphone was to be excluded from use on phonographs or machines made by the Edison Company, which seems to be referred to in these letters? A. No.

Q. 188. What, so far as you know or have reason to believe, was the reason that the American Graphophone Company, or the President, Mr. E. D. Easton, finally concluded to not recognize your rights as inventor of the "Jumbo" or big cylinder machine and the invention here in controversy? A. I thought it was because I did not make arrangements with them for the manufacture of the polyphone.

Q. 189. In this title suit, to which you have referred as having been brought against you about June 5, 1899, to compel you to assign your application for a patent involved in this interference, what, if any other, invention of yours do they also charge and pray should be for the same reason assigned to them?

(Objected to as incompetent.)

A. My invention known as the polyphone.

(Adjourned for noon recess.)

Q. 190. What, if anything, has the American Graphophone Company, since you filed your application for a patent which is here involved in interference, done to hamper and injure you and deprive you of the ability to contest this interference? A. They have begun a number of suits against me, and in many ways tried to injure my business by sending out circulars in regard to these suits, calling me a counterfeiter, etc. The circulars were so worded that they led people to believe the machine that I was selling, known as the "Polyphone," was an infringement of their patent, and that they had secured an injunction against this machine so that it could no longer be sold.

(Objected to by counsel for Macdonald as irrelevant, incompetent and immaterial.)

Q. 191. On May 24, 1899, the American Graphophone Company filed its bill of complaint against you in the United States Circuit Court for the Northern District of Illinois, charging an infringement by you of the Bell & Taintor patent No. 341,214, dated May 4, 1886, joining with you as co-defendant the Talking Machine Company, the Polyphone Company and Henry B. Babson. Is that true?

(Same objection.)

A. Yes.

Q. 192. On the same day and in the same court the American Graphophone Company filed its bill against you, charging infringement of the same patent and joined with you as co-defendant Michael Seter, Nicholas Ott, The Talking Machine Company, the Polyphone

Company, Henry B. Babson and Silas F. Leachman. Is that true?

(Same objection.)

A. Yes.

Q. 193. What was the first move made in these suits by the complainant?

(Same objection.)

A. On a mass of detective evidence, they secured their restraining order and an order for my duplicating machines.

Q. 194. Was this restraining order obtained by them with or without notice to you?

(Same objection.)

A. I had no notice whatever.

Q. 195. Did any of the other defendants have notice?

(Same objection.)

A. No.

Q. 196. This restraining order was issued by the court without notice to you restraining you, and seizing your machines, in order that the matter in controversy in those suits might be held in *statu quo* until a motion for preliminary injunction could be argued and decided. Is that the way you understood it?

(Same objection and also objected to on the ground that statements of counsel has no proper place in this record, and to save repetition, counsel for Macdonald wishes to be understood as objecting for the reasons given to all testimony in this line, which obviously has no relevancy to the issue of priority and causes a needless waste of time.)

A. Yes.

Q. 197. Have you any of the circulars or letters which were issued by the American Graphophone Company, or its selling agent, the Columbia Phonograph Company, with reference to this restraining order, and if so, will you please produce the same? A. Here are some of them.

The papers produced by the witness, being five in number, are offered in evidence by counsel for Douglass, the same being marked "Douglass Exhibit Trade Circulars."

(Counsel for Macdonald objects to the introduction of these documents as irrelevant and immaterial.)

Q. 198. When were these circulars issued with reference to the restraining order, on the one hand, and the motion for preliminary

injunction on the other? A. They were issued right after the restraining order and before the motion for the preliminary injunction.

Q. 199. What injury, if any, did that do your business at that time? A. It did the business a great deal of injury, and caused a great loss.

Q. 200. Now, when the motion for preliminary injunction was subsequently made by the American Graphophone Company in these two suits, what was admitted by counsel for that company with reference to the one suit in which Seter and Ott were co-defendants with you? A. He admitted that they had no proof of infringement.

Q. 201. With reference to the other suit against you, what did the court decide as to the granting of the preliminary injunction against you? A. The court refused to grant a preliminary injunction against me.

Q. 202. On what grounds? A. On the ground that I was licensed.

Q. 203. Subsequently to that did the American Graphophone Company file a bill of complaint against you for infringement of a patent to one Bettini? A. Yes.

Q. 204. And they also filed this bill against you to compel a specific performance and to compel you to transfer your title to the patent on the polyphone and also your title to the application which you filed in the Patent Office for the invention here in controversy? A. Yes.

Direct examination closed.

Cross-Examination by Mr. Mauro.

C. Q. 205. When and where did you first go into the talking machine business? A. At Grand Island, Nebraska, about 1889.

C. Q. 206. What was the nature of the business you were there engaged in, and for how long was it carried on? A. In 1889 I took up the agency for the Central Nebraska Phonograph Company of Grand Island, Nebraska. It was carried on for about seven or eight months.

C. Q. 207. What was your position in that company? A. I don't know that I had any title to the position. I simply looked after the business for the Central Nebraska Phonograph Company as a side line to my position as manager of the Nebraska Telephone Company.

C. Q. 208. Was the Nebraska Central Phonograph Company one of the companies organized to market machines known as graphophone and phonographs? A. Yes.

C. Q. 209. Did you handle such machines? A. Yes.

C. Q. 209. When you severed your connection with that company, what did you do next? A. I came to Chicago to work for the Chicago Central Phonograph Company.

C. Q. 210. When did you begin to work for that company? A. As near as I can remember, it was the 16th day of September, 1890.

C. Q. 211. What was your position with the company? A. I was inspector when I first went to work for them.

C. Q. 212. What other duties, if any, did you perform while in that service? A. I afterwards became superintendent of the company; still later I became vice-president and treasurer of the company.

C. Q. 213. From September, 1890, when you entered the service of the Chicago Central Phonograph Company, how long did you continuously work for that company? A. Until about the 1st of March, 1892, then I was away for about three months, then went back and stayed with the company until about November 1, 1893.

C. Q. 214. Where were you during the three months referred to? A. In the employ of the American Graphophone Company, at Washington, D. C.

C. Q. 215. While there did you make the acquaintance of the president and other officers of the American Graphophone Company, and if so, give the names of such of them as you became acquainted with at that time? A. I met Mr. James G. Payne, president of the American Graphophone Company, and Mr. Andrew Devine, a director, Mr. Charles S. Taintor, another director, Mr. Bell, another director. I may have met others, I do not recall them at this moment.

C. Q. 216. What were your duties as an employe of the American Graphophone Company during those three months? A. Making duplicate sound records.

C. Q. 217. You say you returned to Chicago and re-entered the service of the Chicago Central Phonograph Company about June, 1892, and remained in the service of that company until November 1, 1893. It was during this period, was it not, that you held the offices of superintendent, vice-president and treasurer of that company? A. It was in July, 1892, that I returned to Chicago. I held the position of superintendent of the company before I went east. I took the same position when I came back, and afterwards became vice-president and treasurer.

C. Q. 218. What did you do on the 1st of November, 1893, when you left the Chicago Central Phonograph Company? A.

About September, 1893, I was one of those that started the Chicago Talking Machine Company, because the Chicago Central Phonograph Company was going out of business on November 1, 1893.

C. Q. 219. Who was mainly in control of the Chicago Central Phonograph Company while you were with it during the years 1892 and 1893? A. Charles Raymond, ex-president of the Board of Trade, was president of the Chicago Central Phonograph Company when I first returned from Washington; then Mr. E. A. Benson, of Omaha, Nebraska, became its president.

C. Q. 220. The control of that company was acquired in 1893 by Mr. Lombard, was it not? A. Mr. Lombard only had one or two shares of stock in that company at any time, so far as I remember, though Mr. Edison, I think, really owned the majority of the company during 1893, though the stock was not in his name.

C. Q. 221. Did Mr. Lombard direct the affairs of the company at any time? A. He did to some extent.

C. Q. 222. Do you know what were Mr. Lombard's relations with the North American Phonograph Company? A. I believe he was general manager of that company.

C. Q. 223. The Chicago Talking Machine Company went into business about the 1st of October, 1893, and continued in business until shortly before you entered the employ of the Columbia Phonograph Company in August, 1897; is that correct? A. I think it was in September, 1893, when they started, or it was about that time; they continued in business up to the 1st of August, 1897.

C. Q. 224. Do you remember whether the records made by Mr. Leachman in 1893 regarding which you and he have testified, were made before or after the organization of the Chicago Talking Machine Company? A. Just after their organization.

C. Q. 225. The business of the Chicago Talking Machine Company was under your direct management during the whole period of its existence, was it not? A. I done most of the managing for the company. Mr. Charles Dickinson was president of the company, and frequently assisted me about them.

C. Q. 226. What were the trade or business relations between that company and the American Graphophone Company? A. They had no relations except that the Chicago Talking Machine Company purchased talking machines and supplies of the American Graphophone Company.

C. Q. 227. Was not the Chicago Talking Machine Company the exclusive selling agent of the products manufactured by the American Graphophone Company in Chicago? A. There was an agreement to the effect that if they bought a certain number of

machines that they were to have the exclusive right to the sale of graphophones in Chicago.

C. Q. 228. You were selling graphophones and supplies during those years or for a considerable portion thereof, in competition with the Edison Phonograph supplies; is that the case? A. We sold both style of machines during the entire period of the time.

C. Q. 229. When you were in Washington in the spring of 1892 you had an unpatented process of making duplicate sound records; is that so? A. I had two processes for making duplicate sound records neither of which were patented when I went there; one of them was before I came away.

C. Q. 230. And with reference to your process an agreement was made between you and the American Graphophone Company licensing the latter to use such process upon payment of a royalty of two cents for each duplicate record made thereby; is that so? A. Yes.

C. Q. 231. You have stated in an affidavit given in one of the suits now pending against you, that, assuming this license to have continued in force until the present time and the sound record of the American Graphophone Company to have been made thereunder, the royalties accruing to you would be upwards of half a million dollars; is that correct? A. I gave up my royalty right for the right to manufacture records myself.

C. Q. 232. I asked you whether I have correctly stated the estimate you have made and sworn to, touching the royalties that were accrued under that license, under the assumption stated in the question; please answer as to that?

(Objected to as the affidavit referred to is the best evidence of its own contents.)

A. I don't remember the exact wording of the affidavit, still I believe that had I not given up my royalty for license that the royalty would now amount probably to a half million dollars.

C. Q. 233. State as fully and clearly as you can what has been the nature of the relations between yourself and Mr. E. D. Easton from the time you made his acquaintance in 1892 down to the end of the year 1898? A. The relations have been both business and personal up to near the end of 1898.

C. Q. 234. Have your relations during that period been extremely cordial, intimate, friendly and confidential? A. Our relations were very friendly up to about the middle of March, 1897. They continued to be friendly up to about the end of 1898.

C. Q. 235. When you were in Washington during those years you were habitually entertained at Mr. Easton's house, were you not? A. Yes.

C. Q. 236. And when it happened to be in summer time, at his place at the sea shore? A. I have frequently been with him during the summer at the seashore, and entertained at his house.

C. Q. 237. You were treated, and regarded yourself, almost as a member of his family; is that so? A. He entertained me very kindly, or hardly as close relation as you state.

C. Q. 238. Your relations with members of Mr. Easton's family were such that you exchanged souvenirs at Christmas and Easter times, as well as frequent letters? Is that the case? A. I always had been and am now very fond of his little girl, Mary Easton. Occasionally I wrote letters to her, as she was only a little child, and I frequently remembered her at Christmas time.

C. Q. 239. Have you not felt, and have you not repeatedly said, in substance, that Mr. Easton has been the best friend you have had on earth, and that he has been like a father to you, and that to his unfailing kindness and generosity you owe mainly what prosperity you have enjoyed? A. Up to the spring of 1897 I believed Mr. Easton to be one of my best friends. Up to that time we had been working together for the general good of the graphophones. I did everything I could to help him make it a success under the belief that when the harvest was gathered in I would be taken care of; but in the spring of 1897 Mr. Easton drove my company out of business by making such rules and requiring us to sign a contract which was against the laws of the State of Illinois, and which contract he never asked any one else except us to sign. He had frequently promised us that we should always be in a position to sell goods at as low a price as the factory sold them and should be well taken care of after our years of hard work for the graphophone. We lost money the first two years of our business on account of the graphophone. I told Mr. Easton almost every time I saw him that we were putting all our money back into the business in the way of advertising, depending on the future. He encouraged me to do this. Notwithstanding the fact that I had furnished him money in advance to pay the running expenses of the factory while he went to Europe, and notwithstanding the fact that I brought out the duplicating business for him, the first successful spring motor for a talking machine, and a great many other things, he forced us out of business, and I found that though he had frequently promised me that we should have the benefit of our work, that there would be none in the business that he would give the prices to that he did us. I found that in two months after he wrote me a letter to this effect that I could buy machines from other dealers who was not buying one-twentieth of the goods that we were and get them cheaper than I could get them

from Mr. Easton. Notwithstanding the fact that Mr. Easton as the president of the American Graphophone Company gave me a license to manufacture duplicate sound records, he simply stated that my license was no good, and I have been figuring ever since trying to understand what he gave it to me for if it was no good. I did believe up to the spring of 1897 that Mr. Easton was one of my best friends, and I will say that he entertained me very kindly until that time, and I think it is probably true that I have said I felt very grateful to him for any kindness that he had shown to me because I was thoroughly sincere in trying to do everything I possibly could for him.

C. Q. 240. Up to the spring of 1897, as I understand you, you were working heartily with Mr. Easton to make the graphophone a success; is that so? A. Yes.

C. Q. 241. His main ambition and effort have been to accomplish that result, have they not? A. I think so.

C. Q. 242. In order to show as clearly as possible the nature of your relations with Mr. Easton during the period referred to, I shall refer to some of your personal letters to him, and I will state that, not wishing to invade your privacy further than it is required for the purposes of this case, I will leave it to your wish and to the advice of your counsel whether or not all the contents of the letters I am about to refer to shall go in evidence. Please look at a letter addressed "My Dear Mr. Easton," dated July 20, 1893, and signed "Leon F. Douglass," and state whether that is an authentic letter?

A. Yes, I wrote the letter.

C. Q. 243. I quote the following paragraph:

"I have been sick and just around again. I was sick in bed at the time I wanted to come and see you so badly.

"You were very kind to cut down the price of those graphophones. You have so many surprises in store for me and always pleasant ones that I never know how to thank you or in any way repay you for them. You have so large an account on the credit side that I will never be able to balance my books. I appreciate the kindness lots more than I do \$10."

Does that passage express sincerely the sentiments you entertained for Mr. Easton at that time?

(Objection is made unless the entire letter is offered in evidence.)

Counsel for Macdonald requests the magistrate to mark the letter "Macdonald Exhibit Douglass Letter, July 20, 1892," for identification.

A. I certainly felt what the letter says.

The further taking of testimony is hereupon adjourned until Wednesday, December 13, 1899, at ten o'clock A. M.

H. M. MUNDAY,
Notary Public.

Wednesday, December 13, 1899, ten o'clock A. M. Met pursuant to adjournment. Present as before.

C. Q. 244. I show you a letter addressed to Mr. Easton under date of November 23, 1896, and ask if you wrote it? A. Yes, I wrote the letter.

C. Q. 245. In this letter you announce your approaching marriage, and tell Mr. Easton that you wish him to be the first to know of it, and referring to one of his daughters you say: "But tell her and Hattie that they will have to have a new sister and you a new daughter, *because you have always been as kind as a father to me.*" Does that passage represent the feelings you entertained towards Mr. Easton and his family at that time? A. I certainly felt whatever I wrote at that time, but have found since, to my great disappointment, that Mr. Easton was not the friend that I had supposed, because no true friend would have forced me out of business as he did in 1897, and afterwards, just because I would not give him my invention known as the "Graphophone Grand," he advertised me all over the country as a counterfeiter.

Counsel for Macdonald requests that the letter referred to in the preceding question and answer be marked "Macdonald Exhibit Douglass Letter, November 23, 1896," for identification.

C. Q. 246. In your answer to C. Q. 239 you have recited certain supposed injuries inflicted upon you by Mr. Easton in the spring of 1897. Am I to understand from that answer that your feelings towards Mr. Easton underwent a change at that time, from friendliness to animosity? A. No. I thought so much of Mr. Easton that I tried to make myself believe that he was doing right, though I could not see where he was.

C. Q. 247. You believed at that time that you had been wronged by him, did you? A. Yes.

C. Q. 248. But you accepted from him the position of manager of the Chicago office of the Columbia Phonograph Company, did you not? A. I did.

C. Q. 249. And while you occupied that position you participated in the harvest at the rate of over five thousand dollars per

annum, did you not? A. The profit was very small that year in comparison to what it had been the year before. I had been making ten thousand dollars a year with the Chicago Talking Machine Company, and my income was reduced by about half when I went to work for the Columbia Phonograph Company. When I got the business worked up so that my income went up to the rate of about seven thousand dollars they put me, against my will, into the experimental department, and again cut me down to five thousand.

C. Q. 250. You say that they put you against your will into the experimental department. Is it not a fact that you expressed doubt whether you desired this change or not, and left it to Mr. Easton's decision, and do not your letters show that fact? A. When I said "against my will" I referred to the beginning of the time when the discussion began in regard to this matter, and I told Mr. Easton that I did not believe it would be the best thing for me to take this position, and he tried to persuade me that it would. It is true that I finally left the matter to Mr. Easton, though I told him, as I remember it, even to the last, that I did not think it would be best for me, and it is not true that I was put into this position at my request, as I remember Mr. Easton stated in an affidavit in another case.

C. Q. 251. You claim, as I understand it, that you invented the improvement described in your application of interference in the year 1888 or 1889, and practically used it at that time. Is that the case? A. As I understand invention, it is.

C. Q. 252. You also claim, as I understand it, that you concealed this invention from all persons who could have made it profitable to themselves, to you and to the public, until you disclosed it to Mr. Easton in September, 1897. Is that the case? A. I feel quite sure that I told Mr. Easton about it before, but I cannot positively remember telling him before, and I would not say so.

C. Q. 253. You either remember that you told him before this or you do not. Please state which it is? A. I think I did tell him before.

C. Q. 254. When do you think you told him? A. I think I told him in the fall of 1894.

C. Q. 255. State all that you think you remember about this? A. I think I called his attention to the improvement in the record of surface speed shortly after the disk experiment machine, in the fall of 1894. I believe it was at Atlantic City, New Jersey.

C. Q. 256. When you disclosed this to him, whether in 1894 or in 1897, what was your purpose in so doing, what, if anything, did you desire him to do about it? A. I wanted to see if I could not get him to make machines for me.

C. Q. 257. Did you ask him to do so, and if so, with what result? A. I don't remember that I asked him to make the machines. I first told him about the improvement, and he told me the making of an entire new machine meant an enormous outlay; that new machinery would have to be made; new duplicating machinery; different sized molds for the cylinders, and I think he mentioned figures something like fifty thousand dollars or more to be the cost of machinery in getting ready to turn out a new machine, with special cylinders and all that sort of thing.

C. Q. 258. When did this talk happen which you have referred to in your last answer? A. It happened in September, 1897.

C. Q. 259. Could you not have proved to Mr. Easton, or to any one familiar with the talking machine business, that the results produced by this invention were such that an expense of fifty thousand dollars to introduce it would be insignificant? A. I told him about the results, and told him I could make them almost as loud as a man's voice. He did not seem to be specially interested in it and I thought there was no use in trying any farther.

C. Q. 260. When you made this invention in 1888 or 1889, did you consider at that time the subject of applying for a patent and of introducing the invention into use, and did you then decide that you would postpone these acts until the expiration of the broad patent? A. I understood from newspapers and general reports that the Graphophone Company and Mr. Edison owned the patents exclusively, and that nothing could be done with it. I was very much afraid that some one would find out I had made this experimental machine and would come along and take it away from me, as the telephone company had with a couple of telephones I had made. So I did nothing.

C. Q. 261. Is your answer to my last question intended to be yes or no? A. I would certainly have applied for a patent and introduced it into use if I had thought I could.

C. Q. 262. When you were in Washington in 1892 for about three months, and made the acquaintance of the officers of the American Graphophone Company, why did you not endeavor to interest them in this invention and to make an arrangement with them regarding it? A. I don't know that I had any reason for not trying to. I never did try.

C. Q. 263. You found while with them that you could secure an agreement for use on royalty of an unpatented process; did it not occur to you to show them that you had an invention of much greater value than this, and that you might realize upon it through an agreement with them? A. It did not occur to me.

C. Q. 264. Were you at that time still acting with the design of keeping this invention to yourself until expiration of the American Graphophone Company's patents? A. I don't remember that I thought anything about the subject then.

C. Q. 265. Is it not a fact that you did not consider at that time that you had made any invention at all in 1888 or 1889? A. I knew that the results that I secured in Grand Island in 1888 or 1889 were very much louder than the graphophone, and as I stated before, I understood the graphophone people owned the patents and I knew I could not do anything with it. I may not have at that time considered the question of getting it patented.

C. Q. 266. When did you first consider that question, so far as you can remember? A. I always thought I would take hold of it when I could, that is at least, ever since 1893, as I then better understood what I had done at Grand Island in 1888.

C. Q. 267. You have stated that you understood that to secure your rights as inventor, it was only necessary to make a demonstration from time to time. When did you obtain that idea? A. In 1890, I think, I cannot remember exactly.

C. Q. 268. Assuming it was about 1890, you considered it was about time to make a demonstration in 1893, did you? A. I did do it in 1893.

C. Q. 269. You seem to have taken no steps until February of the present year to protect your rights in this invention. Did you do nothing to preserve evidence of the fact of your invention by preserving sound records or a written date and description, or anything of that sort until the Ford record of 1897? A. I showed these records to others made at various times. I did not keep them; I never make any drawings of any of my inventions. It probably would have been a good plan if I had. It was merely an accident I kept the Ford record. I have never made any written description of it.

C. Q. 270. Please state what kind of wax you used in your 1888 and 1889 experiments? A. The wax used at that time was melted from candles.

C. Q. 271. Do you know what kind of candles? A. I don't know what kind of candles exactly, though I can say they were not paraffine candles. I believe the candles were made of stearine, or stearic acid.

C. Q. 272. Was the wax soft or not as compared with compositions for receiving sound records with which you are familiar? A. The wax was hard enough to use, though it was not as good as the Edison wax.

C. Q. 273. You say you prepared the surface by shaving this wax with a lathe chisel. Did you hold the chisel in your hand in shaving the surface? A. I believe I did. I am not sure.

C. Q. 274. There were two kinds of tinfoil phonographs upon the market, one a very large and heavy machine and the other considerably smaller and lighter. I suppose you are familiar with these two types. If so, please tell me which type was that used in your experiments? A. I am not very familiar with the tinfoil machines, as to the different sizes made. Therefore, without seeing the two together I do not know as I could state which one I used.

C. Q. 275. What was about the weight of the machine you used? A. I don't know that I could state. It may have been fifty pounds, but I am not sure.

C. Q. 276. In one of these types the arm which carried the diaphragm was fixed to the face plate and stood vertically. In the other, the arm was arranged horizontally over the cylinder. What was the arrangement in the machine you used? A. As I remember the machine the diaphragm was setting, I should say, at an angle of about forty-five degrees.

C. Q. 277. You mean forty-five degrees with the horizon? A. Yes.

C. Q. 278. This arm was held rigidly in place, and the cylinder or mandrel was moved longitudinally by a feed screw? A. Yes.

C. Q. 279. What sort of a diaphragm was used? A. I don't remember what the diaphragm was made of, but I think it was mica.

C. Q. 280. What sort of a point was on it when you got it? A. An indenting point.

C. Q. 281. How did you attach to it the recorder and reproducer points which you had made? A. The recording point was attached about in the same manner that it was attached to the phonograph, in the double-spectacled machine, as it was called. I am not sure whether I attached the reproducer point to this same arm or had another made for it.

C. Q. 282. You think you had the reproducer point and the recorder point attached to the same diaphragm? A. Not at the same time.

C. Q. 283. What means, if any, were used to regulate the depth of cut of the recording point and the position of the reproducing point when in operation? A. The diaphragm arms swung back away from the cylinder. As I remember, it came up to a stop when in place, but as the thickness of the cylinders varied, there had to be an adjustment so that it was allowed to cut so deep. I put

something in front of the arm to stop it, as near right as possible, and in this way changed the regulation.

C. Q. 284. Then there were no automatic regulating devices used? A. No.

C. Q. 285. The mandrel of the machine had on it a spiral groove corresponding to the pitch of the feed screw, did it not? A. Yes.

C. Q. 286. When you had cast a wax cylinder around this mandrel, and made a record on it, it was necessary to destroy that cylinder in removing it before you could make another, wasn't it? A. When I had pared the cylinder as thin as I could use it. I don't remember whether I took the old wax off; I may have put another right on.

C. Q. 287. To put the question in another way, there was no means of removing a record from the machine without destroying it; is that so? A. Yes, that is correct.

C. Q. 288. What became of that machine? A. I don't know; I know I took some of the parts off of it and put on another machine that I used later, which had a small cylinder.

C. Q. 289. Referring now to the records made by Mr. Leachman in the fall of 1893, please state the type of machine that was used in making these records? A. I think the machine was afterwards called "Type U."

C. Q. 290. You mean the graphophone "Type U"? A. Yes.

C. Q. 291. Do you know whether this was in September or October of 1893; I believe that both months have been mentioned? A. It was very close to the first of October. It may have been either side of that.

C. Q. 292. Mr. Leachman made no other records on the graphophone at about this time, to your knowledge, did he? A. It was the first time he had ever made a record on the graphophone. I don't remember that he made any more records by the use of the graphophone until he made the disk record where the graphophone was used in 1894.

C. Q. 293. The records were made on a machine which you took to his house and afterwards took away? A. I believe I took the machine away, if not, it was brought to me the next day.

C. Q. 294. What was your object in taking a Type U graphophone to Mr. Leachman's house? A. To have him make some records for me on the machine.

C. Q. 295. Was it to have him make records or to have him see and appreciate the machine? A. No, it was to have him make records. He could have seen the machine down-town.

C. Q. 296. Is not the fact this—Mr. Leachman was a partisan of the phonograph; you were a zealous advocate of the graphophone; you wished to convert Mr. Leachman to your views; the Type U graphophone had shortly before that come up; you took a machine of that kind to his house and had him make some records on it to convince him that it was a good machine? A. That might have come in incidentally; I may have tried to convince him it was a good machine, as I was trying to do those machines with every one. As I remember, the main object of the visit was to make some records on the machine.

C. Q. 297. Was not the following true—that you simply made a few records on the machine, or rather, that you had Mr. Leachman make them in the ordinary way, varying the speed of the machine within ordinary limits? A. The machine on one occasion was run as fast as it would go. We have made several records this way, but one record I am sure of, because I took it down to show Mr. Charles Dickinson. We also made some records in the ordinary way.

C. Q. 298. Was it then impressed upon your mind that the records made at the high speed was an unusual or remarkable record? A. Yes, it was the best record I had ever heard in my life up to that time.

C. Q. 299. Did you at that time consider the question of applying for a patent or of introducing this invention into use, and if so, what did you decide about it? A. I had a talk with Mr. Dickinson about it. I told him I thought it would be a great thing if we could make a machine embodying this principle, and he said he thought so too, but he thought the patents would prevent us from doing it.

C. Q. 300. You were at that time on the best of terms with Mr. Easton, and the American Graphophone Company. Why did you not call his attention to this remarkable result and make an effort to introduce the invention into use? A. Just at that time I began working very hard, in fact night and day, getting my company started, and getting out a spring motor for the talking machine. I saw a chance to use the spring motor without interference, and get some benefit from it for my company. The next time I saw Mr. Easton was to show him my spring motor, and I was very enthusiastic on it. It was the first thing in my mind at that time. I may have told Mr. Easton about this result on the records, but I do not remember that I did.

C. Q. 301. Do you mean that you considered the spring motor of more importance than the improvement in records? A. Tempo-

rarily I might have thought so, and the spring motor was a very important feature in the business. And it was one of the things which made the talking machine business a success.

C. Q. 302. Am I to understand that you were too busy at that time to write Mr. Easton about the result you had obtained with the high speed record? A. I had a great deal of work on hand at that time, and unless I could see some way of getting immediate results and some benefit for my company, I would let it rest until some future time. I don't remember that I wrote Mr. Easton in regard to this, but I told Mr. Charles Dickinson of it, who was my partner in the business and president of the company at that time.

C. Q. 303. Anything that would have improved the sound records would have benefited your business, would it not? A. That would be my view of the matter, but I know it was not Mr. Easton's view of the matter. He said the records were already way ahead of the public, and we should have to wait until the public caught up with us.

C. Q. 304. You say that you may have told Mr. Easton about this high-speed record made by Leachman on the Type U graphophone. Can't you remember whether you did or not? A. No.

C. Q. 305. Cannot you remember that you did in fact tell him about the records made by Leachman on the Type U graphophone, and that what you told him was in substance this: "That you had made some fine records on that machine at Leachman's house and that Leachman was delighted with the machine"? A. I may have told him that, I don't remember.

C. Q. 306. Isn't it a fact that you told him in substance what I have said, without saying a word about a high speed record or about any one record being better than the other? A. I don't remember whether I told him about going through the various experiments or not.

C. Q. 307. Had you any reason at that time for not telling him about this result which impressed you so much? A. Mr. Dickinson, who was my partner in the business, had told me that about that time, that I ought to save the benefit of my experimental work as much as possible for our company. I do not know but that I would have told Mr. Easton at that time all the details of the experiments.

C. Q. 308. Was it not your habit and uniform practice at that time and for many years thereafter, to tell Mr. Easton everything you thought of that might improve the graphophone or benefit the business? A. I did not tell him everything I thought of. I communicated a great many things which I thought would improve the business. Some he thought well of, and others he poured cold water on.

C. Q. 309. You cannot state then that you ever disclosed to Mr. Easton the idea of making records at high speed until your alleged conversation with him in September, 1897; is that the case? A. I would not be sure of it until that time.

C. Q. 310. If you told him at all about the records made at Leachman's house, is it likely that you would have omitted mentioning the remarkable results which you obtained at that time? A. Frequently I mentioned things to Mr. Easton in letters but did not go into the details, because I usually went into those when we met. If I had written him on the subject at that time, I might have just mentioned the subject, but it was always our custom to take up those things more extensively when we met.

C. Q. 311. When you had a new idea, which you wished to communicate to Mr. Easton, it was your frequent practice to write about it, and sometimes, when you deemed it important, even to telegraph, was it not? A. Most of the things that I explained to Mr. Easton and told him about was at times when we would meet.

C. Q. 312. Please answer as to your custom with reference to letters and telegrams? A. I have written and telegraphed Mr. Easton, I suppose, about things.

C. Q. 313. You have spoken of some record made on a disk graphophone by Mr. Leachman in the latter part of 1894. Do you remember when you first saw Macdonald's disk graphophone at the office of the Columbia Phonograph Company, 919 Pennsylvania avenue, Washington, D. C? A. About six months after I had shown mine to Mr. Easton.

C. Q. 314. Was it at the place I have stated? A. Yes.

C. Q. 315. Will you swear that it was not before you had shown yours to Mr. Easton or even made it? A. I will positively swear that it was not until after I had shown mine to Mr. Easton that I saw the machine which I understand you to refer to, at the Columbia Phonograph Company's office in Washington.

(Recess for noon.)

C. Q. 316. What was the diameter of the disks used in the Macdonald disk machine, to which you have referred? A. About five inches in diameter.

C. Q. 317. Did your disk machine differ in any respect from the old Taintor disk graphophone, and if so, in what? A. I believe in the Taintor machine there was an arrangement that kept the surface speed of the disk the same all the time, whether near the center or near the outside of the disk, while the disk machine that I made the surface speed varied from the center to the outside of the disk, as the reproducer travels from the center to the outside.

C. Q. 318. You mean that the Taintor machine had means for

giving the tablet a uniform surface speed under the recording point, and that your machine did not have such a provision, is that right? A. Yes.

C. Q. 319. You say that Mr. Amet made for you a disk machine in the latter part of 1894, and that the results were not entirely satisfactory, and that you subsequently had Mr. Amet make a disk attachment for an ordinary graphophone. When was that disk attachment made? A. I don't remember exactly when the work on the disk machine was started. The idea occurred to me to make a disk machine while I was in Europe, and from where I returned about the 1st of May, 1894. I at this time told Mr. Easton that I was going to make a disk machine, and some time thereafter the machine was started. It was finished in a manner so as to make the record on the disk machine itself along close to August. The attachment for making the record on the graphophone was made at this time. I would not fix the date exactly, but it was before I went east and showed this machine to Mr. Easton.

C. Q. 320. When you say "machine," that you showed Mr. Easton in the last answer, you mean the disk machine or disk attachment? A. I mean the disk machine.

C. Q. 321. You say that you made a number of these disk machines and sold some of them to Mr. Easton; please describe that transaction more fully, stating what you were paid for them and all that you remember about it? A. As I remember, I wanted to get up a cheap machine, thinking perhaps I could get Mr. Easton to make it for me. The experimental work I think, cost me something like three hundred dollars. I showed the machine to Mr. Easton, and asked him if I could not make some arrangement to have him make it for me. He said no, that he would not make it for me exclusively, and he would not let me make it. I told him I had spent considerable money in experimenting on it, and I would like to sell the machine I was having made if I could make any arrangement, but he told me he was not willing I should sell the machine. He said that if I wanted some slot machines altered to bring them up to date, he would change over the slot machines for me, if I would drop the work so far as the disk machine was concerned. I think we figured that this would amount to about three hundred dollars. I think the arrangement was settled on that kind of a basis. I believe I sent him some of the machines that had been made, though of this I am not sure. I know I sent him the recording section which went into the graphophone.

C. Q. 322. Have you no book account or correspondence which would show the nature of this transaction and its date? A. I probably have correspondence in regard to the matter, but no book account that I know of.

C. Q. 323. Referring to the records which you say were made by Mr. Leachman on commercial blanks in the year 1895, please identify the machine that was used? A. It was either a Type U, or a Type K graphophone.

C. Q. 324. The Type U had no mandrel, did it? A. Yes, they both had a mandrel.

By agreement of counsel the further taking of testimony is adjourned until Thursday, December 14, 1899, at 10 o'clock A. M.

H. M. MUNDAY,

Notary Public.

Thursday, December 14, 1898. Owing to death in the family of Mr. Devine, this deposition is suspended by agreement of counsel, and the further taking of testimony is adjourned until Thursday, January 4, 1900.

Thursday, January 4, 1900. Met pursuant to adjournment. Cross-examination resumed:

C. Q. 325. What was the difference between type U graphophone and type K in respect to the mandrel? A. They were both the same with respect to the mandrel.

C. Q. 326. Did type K have a removable mandrel? A. Yes.

C. Q. 327. What was the difference between the two machines? A. The difference between the machines was that type K had a paring knife and type U did not.

C. Q. 328. You say that Mr. Leachman made a mistake in regard to the style of machine used by him at that time. What was the mistake? A. He described a machine known, I believe, as type C, which had a stationary mandrel, and the machine used was either a type U or a type K which had a detachable mandrel.

C. Q. 329. You were present when Mr. Leachman gave his deposition in this case were you not? A. I was, most of the time.

C. Q. 330. You heard Mr. Leachman identify the machine he used in these experiments by a key or knob on the end of the mandrel which prevented the cylinder slipping off, and heard him say: "I had never handled this kind of a machine before nor since," did you not? A. I heard him speak of the knob on the end of the mandrel. I don't remember the other part.

C. Q. 241. You know that that knob did not come into use for some years after the date of the experiments as given by Mr. Leachman, do you not? A. Neither the knob nor the machine came into use until the year 1897.

C. Q. 242. Referring to the records made by Mr. Ford in

September, 1897: You say that you wished to get several records of the song entitled, "I love you in the same old way." What did you want them for? A. I wanted them for use on the nickel in the slot machines in the parlor of the Columbia Phonograph Company, as the machines always paid better when they had on popular songs, and this song was specially popular at that time, I was anxious to get the records for that use.

C. Q. 243. Was Mr. Ford paid for making the records? A. I think Mr. Ford was paid so much for each record he sang, with the exception of the high speed record, I told him I wanted that for my own use.

C. Q. 244. Wasn't he in fact paid a lump sum for the entire service? A. It is always customary to pay a singer for each song he sings. This was the arrangement I made with him.

C. Q. 245. And you are sure he was not paid anything for the high speed record? A. Not as I remember. He made four or five records, and as I remember we paid him fifty cents for each record. And something for his piano player, as he brought him along with him.

C. Q. 246. You were at that time manager of the Columbia Phonograph Company's office in this city? A. Yes.

C. Q. 247. And Mr. Fosler, who assisted you was an employe of that company? A. He was an employe of that company. But I think that week he had been doing some personal work for me, and I paid his salary myself.

C. Q. 248. Whose property were the machines and blanks used on that occasion?

(Objected to as entirely immaterial to any issue in this case or any other case. Because even if the witness had used the property of the Columbia Phonograph Company and had used the time of its employes, that would not make the Columbia Phonograph Company the owner of this invention, unless there was an agreement to that effect between the witness and said Columbia Phonograph Company.)

A. They belonged to the Columbia Phonograph Company. When I took any records for my own use, I had them charged to me, and paid for them or returned them.

C. Q. 249. What kind of a machine was it? A. I think the machine was called type C.

C. Q. 250. That is to say, the business or commercial type?

A. Yes.

C. Q. 251. As I understand your testimony, you have deter-

mined the speed at which Douglass Exhibit 1897 Sound Record was made entirely by hearing it reproduced, and that you made no speed tests at the time the record itself was made. Is that correct? A. When the record was made the machine was run as rapidly as it could go. If the machine could have run any faster the record would have been faster, because I turned the governor until the machine speeded up to its full capacity. I now estimate the speed to be 240 revolutions per minute from listening to it. I did not make any tests of the speed when the record was made, more than to get all the speed I could out of the machine.

C. Q. 252. You did not then at that time aim to get any particular rate of speed, but simply to get a record at the highest speed that the machine was capable of, whatever it might be? A. I knew about how fast the machine would run, so that I knew about what speed the record was going to be made at when I made it.

C. Q. 253. You say you estimate that it was made at about 240 revolutions per minute. Can you swear that it was not made at less than 230? A. To the best of my judgment it was made at 240 revolutions per minute.

C. Q. 254. Will you swear that it was not made at less than 200 revolutions per minute? A. To the best of my judgment; yes.

C. Q. 255. What character of voice had Mr. Ford? A. Rather a high voice.

C. Q. 256. What key was the song sung in? A. I don't know. I don't believe that Mr. Ford sang it in the key that it was written in.

C. Q. 257. What key was it written in? A. I don't know that. We could easily find out.

C. Q. 258. Are you sure that Mr. Ford has not a baritone voice, and that he did not sing that song in the key at which it is ordinarily written for a baritone voice? A. I think his voice was rather high. I am not capable of judging whether a man is between a baritone or tenor or not. I don't know what Mr. Ford's voice would be called; I should say it was rather a high baritone.

C. Q. 259. How long since you have seen Mr. Ford, or heard him sing? A. I never heard him but that once, that time I mean, and have never seen him since.

C. Q. 260. You say that you used this exhibit record a great many times one night in October, 1898, while testing the polyphone. Why was it necessary to test the polyphone so many times? A. I was trying to make what we call "an automatic tracker" for the polyphone to attach it to the graphophone. The early part of October I had one of these trackers made and I wanted to see whether it

would make the polyphone track every time. I used this Ford record because it run fast and I could speed up the machine and run it through much quicker and make the test more rapidly. I used it several hundred times.

C. Q. 261. Was any one present besides yourself, and if so, who? A. My wife was in the house. I don't know that she was in the room where I was making the tests. I kept the machine going almost every evening. She frequently went into the bedroom to put the baby to sleep, and closed all the doors between us so she could not hear.

C. Q. 262. Did you make these tests continuously without intermission? A. Yes; I kept the machine going continuously, setting near it and moving the diaphragms back from the end of the cylinder to the starting point as fast as it run through. This record running so much faster than the ordinary record was the reason I used it, because I could get more tests with the polyphone in a shorter time.

C. Q. 263. Did you make any changes in adjustment of the diaphragms during these tests? A. The tracker on the graphophone had never been very satisfactory, and required frequent changes of adjustment. I think I probably changed the adjustment that night.

C. Q. 264. How long a time did these tests occupy that evening? A. I went home about 5 o'clock and put the attachment on the machine before supper. I think I began testing the machine about a quarter after 6. I don't remember how late it was when I got through. It was usually half past 11 or 12 o'clock before I went to bed. The machine was going all that time.

C. Q. 265. Assuming that you reproduced that record once every two minutes and kept at it continuously without rest or interruption, it would require ten hours to reproduce it 300 times, as stated in your answer to question 84. Do you think you were occupied so long as that, on that evening in reproducing that record? A. In testing the polyphone sometimes I would not let the records run clear though. The most important thing in this tracker was to make the two diaphragms adjust together when they were let down onto the cylinder, that is, place both reproducing points into the same thread. Usually if the adjustment was right when it started it ran through the record without getting out of adjustment. I set the figures at 300, offhand, considering that it would run about that many times in an evening. The record was run all the evening and used to that extent. And when used with the polyphone there was two reproducers on it instead of one, which wears it twice as fast as the ordinary talking machine.

C. Q. 266. Can you state positively that you run that record as many as 100 times that night? A. I can state positively that I ran the record all the evening, from at least a quarter after 6 until 11 o'clock.

C. Q. 267. During your employment as experimentalist for the American Graphophone Company, it was part of your duty to send in written reports regarding the work you had in hand or proposed undertaking for the benefit of that company, was it not? A. Yes.

C. Q. 268. The letter from which you quoted, marked "Douglass' Exhibit 1, 2 and 3" are reports of that character, dated April 2, 1898, April 5, 1898, and March 23, 1898? A. Yes.

C. Q. 269. Referring to the letter of April 2, 1898, Exhibit 1, you quoted part of a passage of which the whole reads as follows:

"In using this style recorder in connection with the Tainter style of blank, in my opinion it will be better to use a large sized blank, as the larger the size of the blank the better the record. We could make a blank to fit the present mandrel. I believe the question of the mailing blank is solved."

What was the particular work or problem on which you were engaged and to which this passage has reference? A. I wanted to make a cylinder of large diameter, with a paper base, and get a wax that would stick to the paper base and not crack. But knowing the principle of the surface speed increasing the volume I stated there that it would be better to make a cylinder of larger diameter, because the larger the diameter the better the record. I had suggested a cylinder six inches in diameter in the letter of March 23d, and described one use for it. The statement in the letter of April 2d, was describing another advantage of the large cylinder.

C. Q. 270. The problem on which you were working and to which you quoted a part of the letter referred was the production of a cylinder for dictation, letter writing, etc., and which should be light enough for sending through the mails, was it not? A. That was one use for it. But there was no need of having a better record for that purpose. A much more important thing, in my opinion, is a musical record that can be mailed.

C. Q. 271. In your letter you state that it will be better to use a large-sized blank in using a particular style of recorder in connection with the Tainter style of blank. But in quoting from that letter you omitted that part of the sentence which refers to a particular style of recorder in connection with the Tainter style of blank. Why did you omit that part of the sentence? A. I thought the whole letter was put in. Only the part was quoted which I thought had a

bearing on this case. And my statement of the larger sized blank the better the record could only mean one thing. No one would suppose for a minute that the size of the blank had anything to do with it, but that the principle of surface speed was involved.

C. Q. 272. You considered, then, that the part of the sentence which you omitted to read had no bearing on this case, did you? A. I considered the important part was the statement in regard to the size of the blank in producing a better record.

C. Q. 273. In the use of a blank for business purposes, would not the capacity of a larger sized blank to hold more matter, have something to do with its utility? A. Yes; that was one of the suggestions the making of a large blank.

C. Q. 274. Did you not also find that with the larger sized blank of the Tainter type there was less liability of clogging in making the record? A. Why, I don't know that I ever noticed that. This is the first time that I have thought of these letters in that way. It was not what I meant.

C. Q. 275. You say in your letter, "We could make a blank to fit the present mandrel." That means your suggestion was to make a Tainter blank of the same size as the ordinary two and three-eighth inch blank, did it not? A. Not all together. My idea was that they could have been made of one size; I had already suggested in my previous letter the making of a six-inch blank. There was a great many machines on the market, and thousands of records could be sold for those machines already in use, if you could get a satisfactory mailing record.

C. Q. 276. In that same letter you refer to a particular recorder designed for use with the Tainter blanks and say:

"The principal feature of it is that it increases the volume of tone in making a record."

Can you point to anything in that letter which conveys the idea that increased volume of tone would result from increasing the size of the blank? A. I made the positive statement in my opinion it would be better to make a large sized blank, the larger the blank the better the record. I don't see what else that could mean.

C. Q. 277. Is it a fact, in your opinion, that the larger the blank the better the record? A. Yes; because it will run faster in surface speed.

C. Q. 278. If a large blank were to run at the same number of revolutions as a smaller blank, they would contain records of the same length, would they not? A. Yes.

C. Q. 279. In your letter of March 23d you refer to making a Tainter blank six inches in diameter and either six or twelve inches

long, "so that you could put from 5 to 10,000 words on a blank." Would it be possible to put anything like this amount of matter on a blank six inches in diameter if it were run at an ordinary speed of from 100 to 120 revolutions per minute? A. It is always customary to run the machine at a slower speed for dictation purposes. My idea of that matter was that as they run the ordinary machine at about 100 revolutions per minute and use a blank six inches long, they would get on about 2,500 words. My idea in this connection was that if you made a blank six inches in diameter and six inches long you could reduce the speed to about fifty revolutions per minute and get on about 5,000 words, and a cylinder twelve inches long you would get on 10,000 words.

C. Q. 280. When you wrote that letter did you in reality intend to convey any more than the obvious fact that by increasing the surface area of a blank you could put more on? A. No; that is the only thing that is indicated by that letter. But my letters of April 2d and April 5th, both tell other uses for large-sized blanks.

C. Q. 281. These letters, or, rather, copies of letters which you have introduced, marked Exhibit 1, 2 and 3, are copies of your reports as an employe of the American Graphophone Company to its president. Did you have separate copies made for your own use, or are these copies which you have produced taken from the records of the Company?

(Objected to on the ground that a demand was made for the production of the originals in the possession of the American Graphophone Company, or its president, and said originals were not produced. And it is therefore incompetent for counsel to inquire into, or contradict in any way the authenticity and accuracy of the copies produced.)

(Counsel for Macdonald does not assent to the proposition of law stated in the objection, but as he has indicated no intention of questioning either authenticity or accuracy of the copies that the objection is uncalled for.)

A. These were the original copies. The company had no records that I know of here—the American Graphophone Company. I had a small file which I kept both my personal and my report letters in.

C. Q. 282. When you left the employ of the American Graphophone Company did you take possession of all the official correspondence between you and that company? A. No; I always had possession of what correspondence there was between us. I had one small letter file which had these letters in; also my personal letters

to Mr. Easton and his replies; also personal correspondence with others.

C. Q. 283. What did you do when you left the employ of the American Graphophone Company with the official correspondence, meaning thereby the letters relating to the business of the company? A. These letters were in this file that I have spoken of, and the file is in my desk. I bought the desk from the company and never thought anything about the letters, they simply staid in the file with the other correspondence and were moved with the desk.

C. Q. 284. At the end of your report of March 23d, Douglass Exhibit 3, is this legend, "Witness Ira G. Fosler." When was that written there? A. At the time the letter was written.

C. Q. 285. The same day the letter was written? A. Yes.

C. Q. 286. What was your object in having an official report attested by a witness? A. I made so many suggestions that had all turned out to be Macdonald's after they were made and assumed a commercial stage, that I thought it would be well to prove that these things had been suggested by me.

C. Q. 287. Why did you not do that with your letters of April 2d and 5th? A. It didn't occur to me again that it was necessary.

C. Q. 288. In your letter of March 23d, then, contains ideas to which you attached considerable importance. Is that so? A. Not especially so.

C. Q. 289. What suggestions of yours turned out to be Macdonald's after they had assumed commercial form? A. The duplicating machines; spring motor; spring motor nickel in the slot machine; the Eagle graphophone, are a few of the important ones.

C. Q. 290. Do you seriously claim to have been the inventor of the things you have mentioned in your last answer? A. I seriously claim to be the first one that suggested these things. And after demonstrating some of them and telling about the others they finally come out within a year or so.

C. Q. 292. Do you know what is covered by Mr. Macdonald's patent for duplicating machine, and do you claim to be the inventor of what is covered by that patent? A. I claim to be the originator and that, in my opinion, is the important thing. There is plenty of mechanics can make something a little different from what is shown them, and I am willing to admit that many of them can do it a great deal better than I can.

C. Q. 293. I ask you the same question with reference to Mr. Macdonald's patent for spring motor. That is, did you first invent what is patented to him? A. I made a successful spring motor and had it in commercial use about nine months before Macdonald's

came out. I don't believe that Macdonald's is the first invention of the style of spring motor that the graphophone is now using.

C. Q. 294. Who do you think is the inventor? A. As I understand the patent on the spring motor, the principal feature is the governor. Mr. Glass, of San Francisco, made a governor of this style long before Macdonald's came out.

C. Q. 294. Do you know what is covered by the patent granted to Macdonald for the Eagle graphophone, and do you claim to be the first inventor of that? A. I did not know that Macdonald had a patent on the Eagle graphophone. If he has I don't think he is entitled to it. I told Mr. Eastman and Mr. Cromelin of a machine of that kind in 1894. Easton wanted me to wait in Washington until he could have Mr. Macdonald come down to Washington so that I could tell him about it. This was on my return from Europe. I could not wait and Mr. Easton asked me to explain it to Mr. Cromelin. I applied for a patent on this style of machine, I think in 1896. The Eagle graphophone did not come out until 1897.

C. Q. 295. You are speaking now about a machine without an endgate, such as the Werner machine which you saw abroad and told Mr. Easton on your return, did you not? A. No; I refer to a machine the same as the Eagle graphophone on which I applied for a patent in 1896.

C. Q. 296. The same in what respects? A. In respect to having the spring motor and the mandrel all together instead of having the separate frame for the spring motor and the mandrel and other mechanism, as was usually done.

C. Q. 297. The application for that was rejected, was it not? A. Not entirely.

C. Q. 298. If the patent is issued, please give me its number and date? A. My lawyers are still arguing the case with the Patent Office in regard to some of the claims.

C. Q. 299. Do you know what is covered by the patent granted to Mr. Macdonald for a spring motor, coin-operated graphophone, and do you claim to be the first and original inventor for what is covered by that patent? A. I did not know that Mr. Macdonald had a patent for a spring motor for a nickel in the slot machine, but I do know that he did not get one out for about a year after I put one on the market, so that it was not an original idea with him.

C. Q. 300. Do you wish to be understood as stating that Mr. Macdonald ever appropriated and patented an invention of yours, and if so, state specifically what that invention was and in what patents of Macdonald it is described and claimed?

(Objection by Douglass' counsel to this line of cross-exami-

nation as immaterial and irrelevant to any issue herein. Because it does not follow, necessarily, that Mr. Macdonald copied the invention in controversy from Mr. Douglass, even though it be shown that he had previously been in the habit of doing so with reference to other inventions. And further objection is made that this cross-examination is not germane to anything brought out in the direct.)

A. I do not wish to do Mr. Macdonald any injustice, but I know that these things spoken of were brought out by him in a slightly different form, after I had either demonstrated the success of the idea or had communicated it to Mr. Easton.

C. Q. 301. Please answer the last question more definitely. A. Mr. Macdonald may have altered the machine sufficient for him to get a patent on parts of it. I refer to the general or original ideas which I consider of more value than the mechanical details of the machine. There is plenty of people that can work out a machine after some one has demonstrated the success of it. I never tried to get a patent on some of these things.

C. Q. 302. Do you know of a single instance in which Mr. Macdonald patented an improvement that he had not invented? A. Yes, I have heard that he has done so.

C. Q. 303. I ask for your knowledge, and not hearsay? A. The man who told me was the one that made the invention. He told me that Macdonald had appropriated it.

C. Q. 304. This is all that you know about it, is it? A. He told me what it was.

C. Q. 305. Who was the man, and what was the invention? A. Frank L. Capps; it was for grinding sapphires, an automatic machine for grinding sapphires, for turning them out at about one-hundredth of the cost than the old way.

C. Q. 306. In your letter of December 16, 1897, to Mr. Easton, you say:

"One of the reasons that I have been taking out patents is because people so easily forget that I was the originator of an idea."

How long had you been acting upon the plan of taking out patents to prove yourself the originator of the ideas patented? A. Not very long.

C. Q. 307. You have stated that you made an application in 1896 for improvement in graphophones. Did you make that application for the purpose of showing that you were the originator of the idea? A. It might have been one of the reasons.

C. Q. 308. Why didn't you do that in the case of the invention

involved in this interference? A. It would not have done me any good to take out the patent unless I could get some one to build it for me.

C. Q. 309. It would have shown that you were the originator of the idea, would it not? A. I could not very well afford to pay for that satisfaction alone.

C. Q. 310. What good would the patent you applied for in 1896 have done you? A. The Edison Company and the Graphophone Company had for a long time been trying to get out a cheaper machine, and I thought it very likely that some arrangement might be made on a machine of this kind.

C. Q. 311. Those companies were very desirous in getting an improvement in the records also, were they not? A. They did not seem to be much interested in my way of doing it when I laid it before them, or one of them.

C. Q. 312. Both companies very quickly brought out machines of the graphophone type when they knew how, didn't they? A. They come out about as quick as several other things that I had explained to them.

C. Q. 313. Didn't you yourself recognize that there had been practically no improvement in records for about twelve years, and that this was one of the most important things to accomplish in the art? A. People's ideas differ so very much that I have found by experience, as for example in 1892, there was as much difference between the phonograph and the graphophone, so far as the record was concerned, as there is now between the ordinary graphophone and the graphophone grand. Notwithstanding this fact, when in the fall of 1892 I put the phonograph or Edison cylinder on the graphophone and put in out in a commercial way and the Graphophone Company knew it all this time, it was nearly a year before they finally adopted the same plan. I don't believe, if you had a machine that would turn out twenty dollar gold pieces for eighteen dollars, that you could immediately convince people that it was a good thing. I know that I have often had schemes or ideas that took me a number of years to get others to believe in, sometimes it took me the same length of time to find out myself that it was no good. That no matter what you might bring out it would take time to convince others of its value.

(Answer is objected to as irresponsive, and the question is repeated.)

A. Yes; I thought this was one of the most important things.

C. Q. 314. You also thought that the reproduction of the orig-

inal sound could be more nearly approached by using a large sized diaphragm and large sized recording and reproducing points, didn't you? A. I thought that a great many things might do it. What you refer to I have never tried.

C. Q. 315. In your letter of March 23, 1893, Exhibit No. 3, you say:

"Another plan that I have in mind is for making a very large diaphragm, making the recording point, and reproducing point large in proportion, also levers connected with it, and in this manner nearer approaching the original reproduction of sounds. In this connection would say that it occurs to me one of the most important things is now to have an improvement in the reproduction of records. The machine has been out nearly twelve years now, and the records that are being made are no better than the ones when the machine first came out."

You have said that you had never tried the plan suggested in this quotation for approaching nearer the original reproduction of sounds. Have you ever tried it since? A. I have not.

C. Q. 316. Do you believe that plan would accomplish the results stated? A. No, I do not, now.

C. Q. 317. While working for the American Graphophone Company as an experimentalist, or since your employment as such, have you made and assigned to that company any applications for patents? A. No.

C. Q. 318. You have stated that early in October, 1898, you said to Mr. E. H. Amet that you wanted to make a machine to use a six-inch cylinder as soon as the patent would allow you to do so. What patent did you refer to. A. The fundamental patents of the Graphophone Company.

C. Q. 319. After your return from Bridgeport in that month you made, or had made, a number of such machines, did you not? A. I started right away to make some; yes.

C. Q. 320. The patent did not stop you then. Why did it stop you in all the previous years? A. What I done was altered a graphophone to use large cylinders, as I thought the Graphophone Company would then make large sized cylinders, and knowing this machine would soon be on the market I wanted to test the polyphone on it.

C. Q. 321. Referring to your trip to Bridgeport in October, 1898: Have you stated in your answer to question 114 the entire conversation between yourself and Mr. Easton, so far as it relates to

using a large cylinder? A. Yes, all that I can remember of it. I don't think that there was anything more.

C. Q. 322. What was the subject of the conversation? I mean what brought the subject of a large cylinder into view? Were you speaking of the polyphone or of the single record blank? A. We were talking of the polyphone and improvement in reproductions. This led to my suggestion of the big cylinder.

C. Q. 323. Was there any general conversation between the party of four, or was the conversation entirely between yourself and Mr. Easton? A. As far as the big cylinder was concerned it was entirely between Mr. Easton and myself.

C. Q. 324. Are you sure that Mr. Babson and Mr. Devine sat opposite to you when this conversation occurred? A. Yes.

C. Q. 325. What was your purpose in urging Mr. Easton to make a larger cylinder, or in asking why he didn't do it? A. I thought it was an important thing to do, and that it would be very valuable.

C. Q. 326. You recommended it as a good thing to do, did you? A. I certainly thought that I would be recognized in it.

C. Q. 327. Did you give him any reasons why he should not do it? A. No.

C. Q. 328. Did you say this is an invention of mine which I intend to patent some day, or any words to that effect? A. I didn't suppose he would think that it was any one else's, and see no reason why I should have said that to him.

C. Q. 329. Did you not recommend it as a thing which he was free to do or not, as he chose? A. I certainly thought that I would be recognized in the matter. But the first thing to do was to interest him in it.

C. Q. 330. Is not the fact this, Mr. Douglass? That until after you had seen and heard the graphophone grand at Bridgeport you had no notion whatever that you had made any invention at all in connection with the use of a large cylinder, and had no thought or intention of making an application for patent therefor? A. I knew I had made a great improvement in making records by taking advantage of the increased surface speed. There is no question about that.

C. Q. 331. In answer to question 116 you have related a conversation at the factory of the American Graphophone Company. Please state the position occupied by the different persons in the room at the time that conversation occurred? A. Mr. Easton, Mr. Devine, Babson and myself, stood just inside the door. Mr. Macdonald stood over near the machine.

C. Q. 332. Was there any one else in the room? A. It may have been that Mr. Fisher was in the room. If he was he stood over near the window and to the side of Mr. Macdonald. He was in the room during the time we were there. I am not sure he was there when we went in.

C. Q. 333. How far away was Mr. Macdonald during the exchange of remarks between you and Mr. Easton, as alleged in your answer 116? A. Perhaps about twenty feet.

C. Q. 334. Was anything more said on this subject than you have stated in your answer 116? A. No; not that I remember.

C. Q. 335. Did your remark that you had tried it before pass without comment from any one? A. I think Mr. Devine and Mr. Babson made some remark, such as is that so, or something to that effect.

C. Q. 336. Did no one ask you when or where you had done it, or show any interest at all in your statement? A. They seemed to be interested in the statement. They did not ask when and where it had been done.

C. Q. 337. How was the interest manifested? A. Mr. Devine acknowledged the statement by a smile, and remarked is that so, or something to that effect.

C. Q. 338. Are the remarks you have quoted in answer 116 the first remarks that were made after the machine was stopped? A. They were the first remarks made after the paper fell off.

C. Q. 339. Do you remember a remark that you made as to the effect that that invention might have on the polyphone? A. Yes.

C. Q. 340. What was it? A. That remark was not made until later. Then I said something to the effect when I first heard that machine I thought the polyphone had gone glimmering. When I made this remark I referred to the time before the paper fell off, because up to that time I did not know what it was. I saw a number of odd looking diaphragms lying on the table near the machine, and I thought it perhaps was something of that kind that was making the improvement. As soon as the paper fell off I knew what it was.

C. Q. 341. Frequent reference has been made in this testimony to the polyphone. That name I understand is used to designate the device described in Patent No. 613,670, dated November 8, 1898. Is it not? A. Yes.

Counsel for Macdonald gives notice that he will refer at the several hearings of this interference to the official records of the Patent No. 613,670.

C. Q. 342. You have stated that about the middle of November the American Graphophone Company tried to sell you a grapho-

phone grand. Is it not the fact that that company gave you an opportunity to place an order for one if you desired to? A. The company, through their selling agent, the Columbia Phonograph Company, by George W. Lyle, their manager, repeatedly urged me to buy one. Mr. Easton wrote me saying that I could place an order for one if I desired.

C. Q. 343. You have said you thought it very strange indeed, that they should want to charge you the same as any retail customer, and that you told Mr. Easton that under the circumstances you did not care to buy one. What were the circumstances you referred to? A. I also said in that letter that I was very much interested in the machine because it was one of my suggestions. The circumstances were that I believed the machine was made because I had told Mr. Easton of it, and thought it was very poorly recognizing that fact to charge me as much for the machine as they would charge any one else.

C. Q. 344. Were not the reasons you actually gave Mr. Easton for not purchasing the graphophone grand these: That you could not afford to pay as much as \$250 for one, and that the absence of information as to how long the price would be maintained you would not care to spend so much money for a machine? A. I didn't consider it good business policy to buy a machine for sale at the same price any one else could buy it for. I don't know that I gave him any other reasons than that unless the price was going to be maintained, and only a few of them sold, so that the machine would command a premium. I told Mr. Lyle at that time that I did not like the idea of his charging me as much for a machine as they would any ordinary customer, because I believed that the machine was the outcome of my suggestions.

C. Q. 345. Please look at the letter I now hand you, dated November 12, 1898, and state if you wrote the same? A. Yes, I did.

C. Q. 346. In that letter you say:

"Mr. Lyle gave me your message in regard to Jumbo. I told him I should like to have one, but at the price, \$250, I somewhat hesitated without knowing how long the price was going to be maintained and how many machines were going to be turned out. He said they were going to be turned out by hand, and necessarily come out slow, but I told him that I did not see any reason why you could not make twenty-five a day by hand. After the castings are finished, one man could make one a day easy. I have, however, stirred the matter up among likely purchasers and can perhaps sell some any way. I am, however, obliged for the opportunity to get one of the first,

and may decide to do so when I know in regard to the prices and the number there is to be built."

If your real reason for refusing to buy a graphophone grand was that you were not properly recognized as the inventor in the price quoted to you, why did you not state your real reasons instead of giving other and different ones?

(The introduction of the extract in evidence is objected to unless the whole letter is offered; because this letter will show a reference to another matter concerning which there was likely to be some disagreement between the American Graphophone Company or its president, Mr. Easton, and Mr. Douglass, and will show that Mr. Easton was then endeavoring to get exclusive possession of Douglass' polyphone invention.)

(And general objection is made to this method of endeavoring to put documents in evidence like quotations therefrom in the question.)

(Counsel for Macdonald states that he proposes to introduce this letter as part of this case and had the witness identify it for this purpose. He objects to the statement by counsel for Douglass of his inferences from the letter, and states furthermore that when Mr. Douglass introduced the correspondence that took place in November, 1898, including the letter in reply to this, he could have introduced the letter of November 12th, unless he had some reason for not so doing.)

A. In your cross-question 343 you refer to a statement in a certain letter which was as follows:

"Under these circumstances, I hardly feel like ordering a graphophone grand. I feel interested in the machine, however, because it was one of my suggestions."

As I understood the question, I thought you wanted to know what my reasons for that statement was, which I gave. I might have had other reasons as well.

C. Q. 347. You have quoted from your letter of November 16, 1898; the paragraph immediately preceding the words "under these circumstances," is as follows:

"In the meantime, I was under heavy expense besides my own time, and I had to do something until we could get a model and talk over the details."

I ask you again why you did not state either in your letter of No-

vember 12th, or in that of November 16th, what you give now as the reasons for not ordering a graphophone grand? A. The reason that I have given now, I told Mr. Lyle at that time. I do not say now that it was the only reason, and when you asked me in regard to that I understood you wanted the reason for the remark, I feel interested in the machine, however, because it was one of my suggestions.

C. Q. 348. Is not the fact this: That in your letter of November 12th you correctly and fully stated to Mr. Easton the reason you gave Mr. Lyle why you did not order a graphophone grand; and is it not further the fact that the conversation with Mr. Lyle in which you intimated that you were the inventor of the graphophone grand occurred on December 31, 1898? A. I would not like to do Mr. Lyle an injustice, but I believe I told him at the time I wrote the letter that it was one of my suggestions, the reason given now is what I felt at that time, and the reason that I made the statement in that letter. I do not now say it was the only reason that I had. It was one of them.

C. Q. 349. I cannot see how there is any possibility of doing Mr. Lyle an injustice. What I want is your recollection and testimony as to the date when you first intimated to Mr. Lyle that you considered yourself the inventor of the graphophone grand? A. I believe I told Mr. Lyle at the time when I said I was interested in the machine, because it was one of my suggestions.

C. Q. 350. Was not the conversation you had with Mr. Lyle in substance this: He told you that the American Graphophone Company had taken out patents for a graphophone grand in all European countries, and also in Japan, and you thereupon said to Mr. Lyle that you were the inventor of the graphophone grand and that you did not see how the American Graphophone Company could take out patents for it, as you had made an application for patent for a large type of machine more than a year previously? A. No; I might have told Mr. Lyle that I told Mr. Easton about it over a year before. I certainly did not tell him that I had taken out a patent. Of that I am positive. He did tell me something about the patents that the American Graphophone Company were going to take out, or had taken out, but it was not in November at the time these letters were written.

C. Q. 351. The conversation in which Mr. Lyle mentioned the foreign patents of the American Graphophone Company occurred the last of December, 1898, did it not? A. I don't remember just when it occurred, but I think that is about the time.

C. Q. 352. When you told Mr. Lyle that you were the in-

ventor of the graphophone grand and that you had disclosed to Mr. Easton some time previously, you read to him extracts from some of your letters to Mr. Easton, did you not? A. I believe I did.

C. Q. 353. These were the letters of March and April, 1898, which have been put in evidence in this case, was it not? A. They are the letters. I also told him at that time or at some of these conversations that I had a record at my house covering the invention.

C. Q. 354. When was it that you read to Mr. Lyle the extracts from your letters to Mr. Easton? A. I don't remember exactly when it was, but there were others present at that time, and they might remember.

C. Q. 355. After November 12, 1898, when you gave Mr. Lyle your reasons for not purchasing a graphophone grand, when did you next have a talk with him on that subject? A. I think it was along in the early part of December.

C. Q. 356. Are you unable to remember whether it was at the first conversation at which you mentioned yourself as the inventor of the graphophone grand, or at some later conversation that you produced your letters to Mr. Easton and read from them to Mr. Lyle? A. I don't think it was the first conversation.

C. Q. 357. How near to the first conversation was it? A. I don't remember. But I don't think it was at the first conversation, because we went to lunch together that day, and I believe I mentioned the fact that it was one of my suggestions, while we were at lunch.

C. Q. 358. The first conversation at which you stated to Mr. Lyle that you suggested or invented the graphophone grand occurred at your office, did it not? A. No, I think it occurred in a restaurant on Madison street.

C. Q. 359. Now, don't you remember that it was about ten days after this conversation that Mr. Lyle called at your place of business and you showed him parts of your letters to Mr. Easton? A. I can't remember when I showed him the letters.

C. Q. 360. Do you remember calling on Mr. Lyle in April, 1899, and asking him if there was anything you could do to facilitate the issue of the graphophone grand patent, and stating that it would be a good thing to have that patent issue so as to stop the infringement of the National Phonograph Company. A. It was about that time Mr. Lyle, Mr. Babson and myself took lunch down in the Boston Oyster House. Mr. Lyle asked me why I didn't get together with the Graphophone Company and settle this case so that the National Phonograph Company could be stopped. I told him I was willing it should be rushed as rapidly as possible, as I would be

very sorry to hold the Graphophone Company off if it was decided that the patent belonged to them. But I believed it belonged to me.

C. Q. 361. You are speaking about another occasion. I think the lunch or dinner you referred to occurred on March 25, 1899, and I ask you to try to remember a visit you paid to Mr. Lyle and at which you asked him what, if anything, you could do to facilitate the issue of the graphophone grand patent? A. I don't remember that we had another conversation, but may have done so.

C. Q. 362. Don't you know or don't you remember that that visit and question of yours led to some correspondence between Macdonald's counsel and your counsel with reference to a possible plan of determining quickly the question of priority between Macdonald and yourself? A. I don't remember what led to the correspondence you refer to. There was some such correspondence.

The further taking of this testimony is adjourned until ten o'clock to-morrow, January 5, 1899.

H. M. MUNDAY,
Notary Public.

Friday morning, ten o'clock, January 5, 1900. Met pursuant to adjournment. Present as before. And thereupon the cross-examination of Mr. Douglass is resumed.

C. Q. 363. In your letter of November 16, of 1898, to Mr. Easton you say, referring to the graphophone grand: "I feel interested in the machine, however, because it is one of my suggestions." Did you mean that for an assertion that you had made the invention which you had seen practically embodied in the graphophone grand? A. Yes.

C. Q. 364. Do you use the word "suggestion" as equivalent to invention? A. Considering what had already passed between us, I did.

C. Q. 365. In question 157 you were asked whether anything was done by the American Graphophone Company to delay the filing of your application, and you answered yes, that Mr. Brown came to you and tried to get you not to file an application. When did Mr. Brown come to you to discuss this matter? A. I did not mean by that answer to convey the impression that it was delayed for a great length of time, as it was not more than ten days or two weeks at the outside that the application was delayed on this account. He first came to me about it somewhere in the neighborhood of the middle of January, in 1899.

C. Q. 366. Was it not the 30th day of January, 1899? A. No, not the first time. I went to California February 1st, and Mr.

Brown exchanged some letters with Mr. Mauro between the time he first came to me and the last time. I mean Mr. Mauro of Washington, D. C.

C. Q. 367. Are you not mistaken in your last answer, and are not the facts as follows: That Mr. Brown first called on you and had a conversation with you on the 30th day of January, 1899? That you requested him to write immediately to me on that very day and to ask a telegraphic reply in order that it might be received before you left for California, and that a telegraphic reply was received by Mr. Brown on February 1, 1899, and showed to you, and that the exchange of letters to which you refer was the one letter which Mr. Brown wrote at your request and the telegraphic answer? A. My application for patent was complete, ready for my signature about the 15th day of January. I know of no other reason that delayed my signing it than the one spoken of. I was under the impression that Mr. Brown came to see me before the exchange of letter and telegram which you have spoken of. Mr. Brown did write a letter about that time. I can't say that it was at my request. He also received a telegraphic reply to his letter, which he either showed to me or told me the contents.

C. Q. 368. Do you swear that your first interview with Mr. Brown on this subject occurred before January 30, 1899? A. No, I am not positive of it. That may have been the first interview. I was under the impression that it was before.

C. Q. 369. The first interview occurred at your place of business where Mr. Brown called to see you, did it not? A. Yes.

C. Q. 370. Don't you remember that on that same day you called to see Mr. Brown and told him that you had been informed by telephone from your attorneys that your application was completed and ready for signature? A. I called to see Mr. Brown and believe I told him that the application was ready for signature. Mr. Adcock told me the other day that the application was ready for signature the 15th of January. It may have been that I told him that my lawyers had telephoned me to find out why I did not come and sign the application.

C. Q. 271. Assuming I am right in saying that the first interview you had with Mr. Brown occurred January 30, 1899, and that you were on that very day informed that your application was ready for signature, you would not say, would you, that Mr. Brown had caused delay in filing your application which was received in the Patent Office at Washington on February 4, 1899? A. If January 30th was the first day Mr. Brown came to see me I would have to cut the time down that he delayed filing the application. He did delay.

C. Q. 372. You claim to have made this invention in 1888; did you not? A. As I understand invention, yes.

C. Q. 373. So it was about eleven years after you made the invention before any counsel of the American Graphophone Company spoke to you on the subject. Was it? A. I had talked with Mr. Easton about it, who I believe was at one time counsel for the American Graphophone Company before the eleven years.

C. Q. 374. You have stated that Mr. Brown came to you and tried to make some arrangements in regard to the invention, and that you asked him if your talk with him was to be confidential, and he said it was. Is not the fact this: That Mr. Brown told you at the outset that he had called on behalf of the American Graphophone Company, who had learned from your statements to Mr. Lyle that you claimed to be the inventor of the Graphophone Grand, and that that company desired such information as you might be willing to give with respect to your claim? A. Such is not the case. If he did not try to make some arrangement, why did he get me to delay my application until he could correspond with Washington in regard to the matter? I am sure I understood the conversation to be confidential.

C. Q. 375. Do you mean to say that it was your understanding that what you said to Mr. Brown was not to be reported to the American Graphophone Company? A. No, of course not. But that the American Graphophone Company was not to take any advantage of what I might say in interference.

C. Q. 376. You say that Mr. Brown stated to you "That he understood that I had written some letters on the subject to Mr. Easton, while an experimentalist for the American Graphophone Company. I told him that was true." Is not the fact this: That you, yourself, showed the letters to Mr. Brown or spoke of them to him, and brought about a discussion with him as to any claim the American Graphophone Company might have in consequence thereof? A. I am now under the impression that Mr. Brown knew of my having shown these letters to Mr. Lyle. We did have some talk in regard to it.

C. Q. 377. You are not positive, then, that Mr. Brown did not obtain his knowledge of those letters from you? A. I am under the impression that it occurred the way I have stated. I cannot be more positive than that.

C. Q. 378. You remember, do you, calling on Mr. Brown at his office in this building after the conversation which occurred between you and him at your place between you and him at your place of business? A. Yes.

C. Q. 379. Now, is not the following the substance of what occurred during that visit of yours to Mr. Brown: There was a discussion of the question whether the dispute as to invention could not be amicably settled; Mr. Brown asked you if there was any proposition you wished him to submit, and you answered that you did not know what to say except that you wanted the credit for the invention, and that to have this credit before the trade would be money in your pocket; Mr. Brown asked you explicitly whether you desired a money consideration for the transfer of your rights or claims to the company, and you said no; that you asked Mr. Brown to write to Mr. Mauro immediately and to ask a telegraphic reply so that it might reach you before your departure for California on February 1st, the reply to be to the question whether you would get the credit for the invention of the Graphophone Grand? A. Practically all the conversation that was had with Mr. Brown was at my office, not his. I only spoke a few words to him in his office. We did discuss the question of a settlement. I told Mr. Brown that I had no proposition to make, but was willing to listen to one. I told him I at least wanted the credit for the invention, and that the first thing to find out was whether the Graphophone Company would recognize me as the inventor or not.

C. Q. 380. What did you call on Mr. Brown for? A. In the morning when he came to see me I had not set the exact time I was going to leave for California, as I was trying to make arrangements for transportation. I secured my transportation just after he came in, and then set the time I was going away. I was down near his office on other business and went in to tell him exactly when I was going.

C. Q. 381. Did Mr. Brown about February 1, 1899, show you the telegraphic answer he received from me to his letter, to the following effect: "Any invention made by Douglass in the service of the company and which he communicated to them he will obtain full credit for"? A. He either showed it to me or read it to me.

C. Q. 382. Did you not give Mr. Brown clearly to understand that all you desired was to obtain credit for a thing which you believed you had invented, and which you claimed you had communicated to Mr. Easton while in the service of the company? A. No. That isn't all I told him that I wanted out of it. I told him I certainly wanted the credit for it. This was the first thing to be settled, as to whether the Graphophone Company would recognize me as the inventor or not.

C. Q. 383. Were not the efforts subsequently made by counsel for the American Graphophone Company, Mr. Brown and myself,

to avoid an interference and to reach a speedy and if possible amicable settlement of priority of invention, in line with the wishes which you expressed to Mr. Brown at your interviews with him? A. Mr. Brown came to see me about giving my date, but I told him that he would have to talk with my lawyers about it. Mr. Brown said himself that it was a thing that didn't often settle the matter, and said he would not recommend me himself to do it. He said he had refused on behalf of some of his clients who was in my position.

C. Q. 384. What I wish to know is whether your attitude was not one of willingness and desire to reach a speedy settlement of the question of priority in order that the patent might issue and infringements be prevented? A. Yes. I thought the patent ought to come out as quickly as possible, and was willing it should be tried as soon as it could be. My lawyers didn't think that it would hurry matters any to do what Mr. Brown suggested. Mr. Brown himself said he didn't know that it would hurry matters.

C. Q. 385. You have stated as your belief that the reason why Mr. Easton concluded not to recognize you as the inventor of the graphophone grand was because you refused to make arrangements with the American Graphophone Company for manufacturing the polyphone. Did the American Graphophone Company ask to manufacture the polyphone, and did you refuse? A. The American Graphophone Company wanted to manufacture it for me and gave me prices several times for manufacturing it, which I refused to accept.

C. Q. 386. Is it not, on the contrary, the fact that you were constantly urging the American Graphophone Company to undertake the manufacture of the polyphones for you?

By Mr. MUNDAY: The use of the word "contrary" is objected to as ambiguous.

Counsel for Macdonald withdraws the expression "on the contrary."

A. I believe Mr. Easton was the first to suggest the manufacture of the polyphone by them. We negotiated for some time in regard to it. He wanted to get me to put it on the graphophone only. I don't think he liked it when I put it on the phonograph. His prices were too high to manufacture the graphophone-polyphone attachment. And I did not take them up.

C. Q. 387. Did not you yourself volunteer to Mr. Easton as an inducement to him to undertake to manufacture the polyphone that you would limit its use to the graphophone exclusively? A. No. Mr. Easton was the first one that suggested that I use it on

the graphophone exclusively. He suggested it in these words: He said, "Mr. Cromelin has suggested to me that if the polyphone is a good thing we ought to have it on the graphophone only." And he asked me what I thought about it.

C. Q. 388. Was not the purpose of your visit to New York and Bridgeport about the middle of October, 1898, mainly to arrange with the American Graphophone Company to undertake the manufacture of the polyphone? A. It was during that time that Mr. Easton made the remark that I have given in my previous answer. The idea had not occurred to me before I went east of having them make it.

C. Q. 389. What did you go to New York for at that time? A. To show the polyphone to the dealers in talking machines, also to see a motor-cycle exhibit in Boston.

C. Q. 390. You brought with you a polyphone attachment for the graphophone. Why did you do that? A. To show it to prospective customers.

C. Q. 391. What did you go to the factory at Bridgeport for? A. That Mr. Babson might see the factory of the Graphophone Company. It was at Mr. Easton's suggestion.

C. Q. 392. Is it not the fact that you went there for the express purpose of having an estimate made of the cost of the manufacture of the polyphone attachment? A. No.

C. Q. 393. Were you not so desirous of having Mr. Easton take up the polyphone that you offered to assign the invention to him on consideration of your name appearing as the inventor, whether you got a patent or not, and of his agreeing to grant you a license to make the machine yourself after expiration of the fundamental graphophone patent? A. What you refer to now is not the present polyphone, but refers to another machine entirely, though at the time you refer to I then thought of calling that machine the polyphone. It is the machine that I have spoken of as making two or three records on the same cylinder at the same time and reproducing the several records together. No such proposition was ever made on what is now known as the polyphone.

C. Q. 394. Your first polyphone had the reproducers arranged side by side so as to engage different threads of the record and the second polyphone had them arranged tandem fashion. Is that right? A. Yes.

C. Q. 395. Now, when was the offer referred to in my previous question, and which you say related to the first polyphone, made?

A. In the early part of 1898.

C. Q. 396. Was not that after you had made your application

for patent for the tandem style polyphone described in patent No. 613,670? A. Yes. It was after I had applied for my patent and sold it.

C. Q. 397. And it was after the application you had made for the other style had been rejected, was it not?

(Objected to by Mr. Munday, as the facts relating to the said application, if any, are confidential, the witness is advised that he should not answer unless he chooses to do so.)

A. No.

C. Q. 398. You had told Mr. Easton that you had made an application for patent for the first style polyphone, hadn't you? A. Yes.

C. Q. 399. And you told him that there had been an interference, but that your lawyers said it didn't amount to much, didn't you? A. There had been no interference like the one in this case. Objections had been cited to some of the claims.

C. Q. 400. That patent has not been issued, has it? A. No.

C. Q. 401. Will you state why not?

By Mr. MUNDAY: The witness is informed that the matter is privileged, and that he can answer or not as he sees fit. The Patent Office will not compel him to answer and will not give the information without his consent. Furthermore the question is objected to as immaterial, irrelevant and incompetent as not being the best evidence.

Counsel for Macdonald submits that the privilege referred to by counsel for Mr. Douglass does not extend to matters that become material as evidence in the cause.

A. As I have been informed that Mr. Macdonald is now trying to get a patent for this same thing, and under advice of my counsel, I refuse to answer.

C. Q. 402. Who informed you that Mr. Macdonald was trying to get a patent for the same thing?

(Objected to as immaterial.)

A. Mr. George W. Lyle told me.

C. Q. 403. Is it not a fact that you had abandoned the first type of polyphone before you made the offer of it to Mr. Easton? A. No. I had built a machine of that style more than a year after I offered it to Mr. Easton.

C. Q. 404. Is it not a fact that after you began to manufacture commercially polyphone attachments for graphophones that samples of all these were placed in the selling offices of the American Graphophone Company and were found to be practically unsalable, and

that in consequence all negotiations between yourself and the Graphophone Company with reference to the polyphone were broken off?

A. The Columbia Phonograph Company has never been friendly to the polyphone, and they got some of the first machines sent out, which were not very perfect. The machine was greatly improved after that, and worked perfectly successful, and a great many of them has been made and sold.

C. Q. 405. Up to the early part of the year 1899 you had not been able to produce a satisfactory model of the polyphone, had you?

A. On the phonograph we had produced very satisfactory polyphones; on the graphophone it was along about that time that we produced the best style we have had of that machine.

C. Q. 406. In instituting public use proceedings against your application here in interference one Gilmore, manager of the National Phonograph Company, has made oath that you voluntarily disclosed to him the pendency of your application and gave him the language of one of the allowed claims thereof. Is that a fact?

(Objected to as immaterial, irrelevant and incompetent.)

A. I gave him what was in that claim.

C. Q. 407. Did you do this in order that he might attack your application, or in the expectation that he would do so? A. No. I had no idea he would.

C. Q. 408. What was your purpose?

By Mr. MUNDAY: You need not answer unless you choose to do so, as it can have no bearing upon this case.

A. By advice of my counsel I refuse to answer.

Counsel for Macdonald requests that access be given him to the files of Mr. Douglass' application for the first type of polyphone.

Counsel for Macdonald not having received any response to the foregoing request, and assuming silence on the part of Douglass being equivalent to a refusal, directs the attention of the Patent Office tribunals to the said application files and particularly to the status thereof on or about March 30, 1898.

C. Q. 409. Please look at the letters I now hand you and state if you wrote them, the letters being as follows: One dated September 26, 1893, a typewritten letter dated March 30, 1898, a letter written with pen and ink also dated March 30, 1898, a letter dated July 5, 1898, all addressed to Mr. Easton? A. Yes.

Counsel for Macdonald requests the magistrate to mark the letters just identified by the witness, and also the letter of November 12, 1898, which was identified yesterday, for identifi-

cation and to designate them, respectively, as follows: "Macdonald's Exhibit Douglass letter September 26, 1893, for identification, and the same March 30, 1898, No. 1. Same March 30, 1898, No. 2. Same July 5, 1898. Same November 12, 1898.

Cross-examination closed.

Re-direct Examination.

R. D. Q. 1. You were asked concerning the amount of wear to which the Douglass Exhibit 1897 Sound Record had been subjected. Have you a sample sound record such as you carry in stock, and are known as the Little Jumbo Record of this same song, "I Love You in the Same Old Way," and which has not been worn? A. Yes, I have, and here produce one.

R. D. Q. 2. State who was the singer and how this record which you have just produced was made? A. This record was made by Mr. Leachman. It is made at a speed of about 240 revolutions per minute.

R. D. Q. 3. This is the kind of records you now keep in stock, and which you call the little Jumbo, is it? A. Yes.

R. D. Q. 4. The sample record produced by the witness is here offered in evidence on behalf of Douglass, the same to be marked "Douglass' Exhibit Little Jumbo Record."

LEON F. DOUGLASS.

Monday, December 11th. And thereupon, JOHN C. HOUCK, a witness on behalf of Douglass, was produced, and being first duly sworn, testified as follows:

Q. 1. What is your name, age, residence and occupation? A. John C. Houck; age thirty years; I reside at Grand Island, Nebraska. My occupation, clerk for the railroad.

Q. 2. Do you know Leon F. Douglass, one of the contestants here, and if so, how long have you known him? A. I do. I have known him since 1887.

Q. 3. State where he lived when you first became acquainted with him, and how long he lived there after you became acquainted with him? A. I first became acquainted with him in Grand Island, Nebraska. He left there in 1889.

Q. 4. What was Mr. Douglass' business at Grand Island? A. Manager for the Nebraska Telephone Company.

Q. 5. Do you know anything about his working on a phonograph while he was at Grand Island? A. Yes.

Q. 6. What kind of a phonograph was it? A. What they termed a tin foil machine.

Q. 7. What did he do with this tin foil machine, so far as you know of your own knowledge? A. He worked with it in the line of experiment to improve upon it.

Q. 8. Just state what you saw done with this machine by him? A. I saw him working with the machine, and particularly with the cylinder. His scheme, as nearly as I can remember, was to improve the cylinder, that is, the record cylinder, as he termed it.

Q. 9. What did he do with the cylinder of this machine, so far as you know? A. Why, he worked to make it larger.

Q. 10. How? A. He used candles to produce a larger cylinder, melting candles.

Q. 11. What kind of candles? A. So far as I can remember, just ordinary candles. I did not pay particular attention to the candles.

Q. 12. Did he use tallow candles? A. I think they were.

Q. 13. What is it, the hard tallow or soft tallow? A. It was hard tallow.

Q. 13. What color, white or yellow? A. Well, sort of a creamy white, so far as I can remember.

Q. 14. What did he do with this candle material? A. He melted it on to the cylinder of the machine.

Q. 15. Then what did he do, if anything, after he had melted the candle material on to the cylinder of the machine? A. He cut it down to obtain a surface.

Q. 16. Then after he had obtained a surface, what did he do next? A. Put a record on these cylinders which he produced as described.

Q. 17. And then what did he do with the record after he had put it on the cylinder? A. He handled the machine in such a shape and manner that we could hear what had been said or talked into the machine.

Q. 18. Did you hear the machine reproduce a record so made on it? A. I did.

Q. 19. Please state how loud the reproduction was? A. Well, it could be plainly heard in the room. I had never heard a machine before that time. Just a comparison, therefore, I could not make.

Q. 20. Had you before this time ever seen one of these tin foil machines, and have you ever, since Mr. Douglass' experiment with

this one, seen such a tin foil machine? A. No. That was the first machine covered with tin foil that I ever saw, and to my knowledge I have never seen one since.

Q. 21. State about how big the cylinder was in this machine, the diameter? A. It was possibly five or five and one-half inches, as near as I can remember. I know it was quite large. It seemed large to me.

Q. 22. How did Mr. Douglass run this machine? By what sort of power? A. By hand power.

Cross-examination waived.

(Signed) JOHN C. HOUCK.

And thereupon Mr. WILL R. KING, a witness on behalf of contestant Douglass, was produced, and being first duly sworn, testifies as follows:

Q. 1. What is your name, age, residence and occupation? A. My name is Will R. King, age thirty-five, residence at Grand Island, Nebraska. I am city treasurer of Grand Island.

Q. 2. Do you know Leon F. Douglass, and did you know him when he lived in Grand Island? A. Yes, sir.

Q. 3. What do you know of your own knowledge concerning experiments which he made with a talking machine or phonograph? A. I saw him experimenting at different times in his office.

Q. 4. When was this? A. In 1888.

Q. 5. Just state connectedly, Mr. King, how the subject came to be introduced to your notice? A. We made a trip to Chicago, and on our way we stopped at Omaha, and we heard a phonograph, one of the Edison machines, in one of the electrical supply houses there, and this interested Mr. Douglass a great deal. And after we came home he picked up an old phonograph there in town, an old machine. This he used to experiment on.

Q. 6. What kind of a phonograph was it he picked up there in town? A. It was known as an Edison tin foil phonograph.

Q. 6. What did he do with this Edison tin foil phonograph? A. He experimented in making records and reproducing them at different times.

Q. 7. State how he made the records on this machine, and if in more than one way, state the different ways? A. He used the tin foil as the machine was then designed for. He afterwards coated the cylinder with sperm, I guess we called it, melting candles, and by trimming the cylinder he produced a record on it.

Q. 8. Did you hear him reproduce any of the records made on this candle material surface? A. I did at different times.

Q. 9. As compared with the reproduction by the phonograph which you heard at Omaha was the reproduction at Grand Island louder or not so loud? A. It was louder.

Q. 10. How large was that cylinder in diameter as near as you can state? A. I should judge at least five inches.

Cross-examination waived.

(Signed) WILL R. KING.

DOUGLASS EXHIBIT I.

"Apl. 2nd, 1898.

My Dear Mr. Easton:

I am mailing you under separate cover the cylinders, and also a new style recording diaphragm. The cylinder is mailed to you for the purpose of showing the name of the record which is stamped on the end, as I think it would be very desirable for the company to do with the record, as I know from my own experience, as I have from seventy-five to one hundred records in my own cabinet at home, at least once every two or three months we have to go all over them and put in new tags in them again, as when different ones are using the machine they get the records all mixed up. The recorder I am sending. I do not know whether this would be patentable or not, but if it is patentable, I believe it would be a good feature to patent, as with this style recorder you could make a good, first-class record on the Tainter blanks. The principal feature of it is that it increases the volume of tone in making a record; another feature is that there is not so much strain on the glass, because the strain of the cut comes on the pin that holds the arm at the lower end of the arm. In the present recorder the glass has to stand that pressure, which pulls it out of shape to a certain extent, and it is likely to contort the sound vibrations that strike the glass, more than the new style does. The third feature is the better satisfaction that it gives to customers, on account of being able to attach it very much easier to the diaphragm glass. The sapphire that we are using at the present time, and its holder often comes off of the diaphragm glass, which is many times lost, which is very irritating to the owner of the machine. If they have another diaphragm to put in, in case the diaphragm glass becomes broken, any one can easily attach this, and get in the right position, very few who put on the recording holders do not get it

straight, which causes the poor records; some people put the recorder on in exactly the wrong direction. In using this style recorder in connection with the Taintor style of blank, in my opinion it will be better to use a large size blank, as the larger the size of the blank, the better the record. We could make a blank to fit the present mandrel. I believe the question of the mailing blank is solved.

Yours very truly,

L. F. D.
Per A. B. T."

DOUGLASS EXHIBIT 2.

"Apl. 5th, 1898.

MY DEAR MR. EASTON: Replying to yours of April 1st, in regard to making a record on the Taintor style of blank, would say, I used up what blanks I had here, without any trouble that you speak of—that is, the clogging, but when this does occur, however, I believe that it can be overcome by getting the right mixture in the blanks; and the most important thing is making a larger cylinder—that is, larger diameter. If you have any of this wax at the factory, could you not send me a quantity of it so that I could experiment in putting it on a larger base. I feel quite sure that I can overcome all the difficulties that you mention. I believe one of the most important things of the whole affair is to make the cylinder larger. If they can send me five or ten pounds of this wax so that I will have plenty to experiment with, I shall be very glad to follow along this line. The recorder that I sent you was simply to illustrate the idea, in case you might want to apply for a patent on it. It was not finished up in as nice shape as I expect to finish them up to send you later; a better sample. We have the machine completed for stamping the name on the end of the record is heat by electric current. Shall we forward it to you or to the factory?

With kindest regards, I remain,

Yours very truly,

L. F. D."

DOUGLASS EXHIBIT 3.

"Mch. 23d, 1898.

MY DEAR MR. EASTON: Replying to your letter of the 16th, would say, that I have already explained in my personal letter the reason for the delay in an-

swering this, and I am very glad that you are so willing I should have plenty of time to work up all the schemes that I have in mind, and I shall follow your instructions of sending in a report once every month of what has been working on, and of course oftener than that if there is anything to report. We started the machinery in the laboratory yesterday afternoon, and everything works very nicely. I think it would be very hard to find a laboratory more complete than ours is now. We could make any part of the talking machines, from the patterns to the completely finished machines; we could probably have got along with less tools than we have; as we are now fixed we can start in and build a machine from the ground up. I trust in the long run that it will prove to the best interest of the company that we have such a complete shop. Among the things that I thought would be good to start off with is a stamp for stamping the end of the cylinder with the name of the record. A foot-power apparatus for winding the spring motor Commercial graphophone; a nickel-in-the-slot attachment for the Eagle graphophone, as I believe if we had a very cheap nickel-in-the-slot attachment, a great many Eagles could be sold to scheme goods houses, especially to the cigar trade, and the grocery trade, as they would in that way be able to sell a great many machines to saloons and to cigar stores. I also have in mind a mailing box for the records; keeping three things in mind. The cheapness of the box, second, the lightness of the box, and the third thing, absolutely reliable way of transporting of the records. I have no doubt that we could sell an enormous quantity of records by mail, if there was a safe way to transport them. Another plan that I have in mind is for making a very large diaphragm, making the recording point, and reproducing point large in proportion; also the levers connected with it, and in this manner nearer approaching the original reproduction of sound. In this connection would say, that it occurs to me, one of the most important things is now to have an improvement in the reproduction of records. The machine has been out nearly twelve years now, and the records that are being made are no better than the ones when the machine first came out; while there have been changes in the construction of the machine simplifying it in many ways, there has been no radical change in the reproduction of records. The next most important subject is the making of a single record blank. In this connection would say, that I believe by using a soft rubber base I believe it would expand and contract with any wax made, and if we can any way strike a medium between the old Taintor cylinders and the

present cylinder, that will make a good record; still less liable to break than the present one, though perhaps not quite so indestructible as the old one. We may be able to arrive at something that is entirely satisfactory, and no less desirable than using so large an amount of wax that we now use for making musical records. If we could find a single record blank for commercial work, even mounting it on paper base, or on a soft rubber base, we could in case of using the rubber, allow the people to return us the rubber gasket, and make them some allowance for them, or, if we use paper base, we could make the cylinder six inches in diameter, and either six or twelve inches long, if we wished, so that you could put from 5,000 to 10,000 words on a blank, where it might have been expensive to make the Tainter's style of cylinder on account of wrapping of the paper, it would be practically no more expensive to make the cylinder six inches in diameter, and six inches long, because the only difference would be in the amount of paper used, which would not increase the expense very largely. My idea, of course, in making a single record blank for commercial work of a large size is to do away with the paring, which is unquestionably a great nuisance.

I also have in mind the making of a permanent record in soft lead, or of some other material, which records we could use for masters, if you do not want to let them reach the public. In this way we could afford to get the most expensive kind of talent, if our master record was indestructible. I believe when I was in New York last, I told you something about having sounding instruments on the horn to make the reproduction louder and clearer, and give more of the over-tone than we are now getting. We may be able to use a little rolling ball—that is, a little ball that revolves as it was traveling across the record, as I believe in this way, that the reproducer would drop into more indentations, and give a better reproduction than the present ball will. Not only this, but it would greatly lengthen the life of the record, and if we used them on masters, the record would be almost indestructible. With a little rolling ball for the reproducer, it would be no more expense practically to make them than the present reproducing point. I do not believe it would be necessary to make them of sapphire, and it would not be near the wear on the ball nor the cylinder either; there is less friction. This, I believe, if it works, would be a good basis for a patent. I believe the record that is now made on the wax cylinder is much better than it is reproduced, and I have in mind a number of methods for making reproducers, which may or may not make improvements in this direction. I also have in

mind that we also ought to find something that will take the place of glass in reproducing and recording, especially in commercial machines, because it is often the little troubles that are annoying and cause delay, which dissatisfies people with the machine; while this is only a small point, it might, in a trial case, sometimes perhaps decide a case against us, if some one did not have a little patience in the matter.

I also have in mind the paring machine, mounted on centers instead of running on core bearing, as they do now. Another thing in connection with the paring machine is, especially for the factory work, where we do such an enormous amount of paring; two or three sapphire knives, one following the other, so that it would not only be necessary to make one cut, or run across the record once; say the first paring knife took off a rather deep cut to straighten the blank, and the second one took a little less cut, and the third one put on a finishing touch, or a musical surface, where we are paring such a large number of records as we do at the factory, this might be an enormous saving in time, and I believe it would make a better surface on the blank, than where you run over the same knife for taking off both the heavy and the light cut. We might also use a revolving cutter, which would be on the principle of a grinding machine.

I have a great many more things in mind, which do not occur to me at the present time, but if you have any preferences as to which things you would like to have me put forward first, I shall be very glad, of course, to follow your instructions. I intended to send you this letter yesterday, but as the baby was taken sick I was hastily called home, though it is nothing serious; we are naturally worried when it winks twice, when we think it only ought to wink once.

With very kindest regards, I remain,

Yours very truly,

Witness: Ira G. Fosler.

LEON F. DOUGLASS."

DOUGLASS EXHIBIT 4.

"NEW YORK CITY, April 2d, 1898.

DEAR MR. DOUGLASS: I have your two letters of April 2d. The cylinder and the special recorder have also been received. Shall be very much interested in testing the recorder, and will probably be able to do this to-morrow, on my visit to the factory.

The stamping of the name on the end of the cylinder is something everybody must approve. It has often been called for, and we have frequently talked about doing it, but somehow have never actually done it. One of the advantages of your position

is that you can keep these things stirred up, until they do actually come to a head. Send along letters about everything you think will be for the good of the company, and do not be discouraged if no immediate action follows.

Yours truly,
E. D. EASTON,
President.

Mr. L. F. Douglass,
211 State Street,
Chicago, Ill.

Dictated and transcribed from the new graphophone."

DOUGLASS EXHIBIT 5.

"NEW YORK CITY, April 8th, 1898.

Mr. L. F. Douglass, 211 State Street, Chicago, Ill.

DEAR SIR: Your three letters of April 5th at hand and contents noted with interest.

"We have sent a copy of your letter relative to Storage Batteries to the factory; and are also ordering that a batch of Tainter's wax be sent you for experimental purposes.

"Suppose, as a matter of experiment, that you prepare your stamping machine and stamp up a lot of records for the Chicago office? Would suggest that you put on only 'Columbia Phonograph Company' and not attempt to put on the name of the selection, for the reason that it might be embarrassing, after the blank was shaved and used for something else.

Yours truly,
E. D. EASTON, *President.*"

Dictated to and transcribed from the new Graphophone.

DOUGLASS EXHIBIT 6.

"NEW YORK, March 25th, 1898.

Mr. L. F. Douglass, % Chicago Office.

"DEAR MR. DOUGLASS: Yours of March 23rd read with much interest. Glad the laboratory is so well equipped and that a good start has been made.

"Among the subjects you mention the most important seem to be as follows:

- "1. A good single record cylinder.
- "2. A permanent master.
- "3. A good mailing box for present cylinder.
- "4. Improvement in reproduction.

"All the other points are good and may come up whenever convenient.

Yours truly,
E. D. EASTON, *President.*"

Dictated and transcribed from the new Graphophone.

STATE OF ILLINOIS, }
COUNTY OF COOK, } ss.

I, H. M. Munday, a notary public within and for the county of Cook, and State of Illinois, do hereby certify that the foregoing depositions of Silas F. Leachman, Henry B. Babson, Edward H. Amet, Leon F. Douglass, W. R. King and J. C. Houck, were taken on behalf of Leon F. Douglass in pursuance of the notice hereto annexed, before me at the office of Munday, Evarts & Adock, Suite No. 906, Marquette building, No. 204 Dearborn street, in the city of Chicago, in said county, on the 4th, 5th, 6th, 7th, 8th, 9th, 11th, 12th, and 13th days of December, 1899, and an adjournment was then taken to the 4th day of January, 1900, and concluded on the 5th day of January, 1900; that each of said witnesses were by me duly sworn before the commencement of his testimony; that the testimony of said witnesses was written out by myself and Maria Price in my presence; that the opposing party, Macdonald, and his assignee, the American Graphophone Company, by its President, Mr. E. D. Easton, and its director, or treasurer, Mr. Andrew J. Devine, and by his and its counsel, Mr. Philip Mauro, were present, Messrs. Macdonald, Easton and Devine being present up to December 12th, and Mr. Easton returning and being present on January 4th and 5th, during the taking of said testimony; that said testimony was taken at said Suite No. 906, and was commenced on December 4th, 1899, at ten o'clock in the forenoon, and was continued pursuant to adjournment on the 5th, 6th, 7th, 8th, 9th, 11th, 12th, and 13th of December, and continued to the 4th of January, 1900, and was concluded on the 5th of said January, 1900; that I am not connected by blood or marriage with either of the parties to said cause, nor interested directly or indirectly in the matter in controversy.

In testimony whereof I have hereunto set my hand and affixed my seal of office at Chicago, in the county of Cook, and State of Illinois, this 5th day of January, A. D., 1900.

H. M. MUNDAY,
Notary Public.

[SEAL.]

REBUTTAL TESTIMONY.

IN THE UNITED STATES PATENT OFFICE.

In Interference No. 20,090.

Leon F. Douglass }
vs.
 Thomas H. Macdonald. }

REBUTTAL TESTIMONY ON BEHALF OF DOUGLASS.

DEPOSITIONS of witnesses taken in rebuttal on behalf of Leon F. Douglass, at room 906, Marquette Building, Chicago, Illinois, beginning at ten o'clock on Tuesday, January 20, 1900, pursuant to agreement, before H. M. MUNDAY, Notary Public.

Present: Edmund Adcock, Esq., on behalf of contestant Douglass, and Philip Mauro, Esq., on behalf of Macdonald.

LEON F. DOUGLASS, a witness produced on his own behalf, being first duly sworn, testifies as follows.

Q. 1. Are you the same Leon F. Douglass who is one of the contestants in this case? A. Yes.

Q. 2. Mr. Macdonald has stated substantially in his deposition that in making his tests of the Douglass Exhibit 1897 Sound Record, on December 7, 1899, at 107 Madison street, he turned up the speed of the Type M electric motor phonograph upon which that test was made as high as it would go, and that its speed was then about 195 revolutions per minute, and that its speed could not be made greater and govern. Is this correct, and if not, state what the facts are? A. It is not correct. Since returning from the east I have several times tested this machine under exactly the same conditions that the tests were made on December 7th, 1899, I tested it with the standard speed indicator, and found that it can be speeded up to 270 revolutions per minute while under perfect control of the governor. And I know that it can be speeded much higher than 195 revolutions per minute.

Q. 3. Were you present when Mr. Macdonald made this test on December 7, 1899, and is it true that Macdonald did try the Douglass Exhibit 1897 Sound Record at a speed as high as the machine would run? A. I was present. It is not true that he

tried the machine at anything higher than about 195 revolutions per minute, and he refused to try it at any higher speed. Though I know the machine will run much faster.

Q. 4. Macdonald has testified, substantially, that when he was testing this Douglass Exhibit 1897 Sound Record on December 7, 1899, and as he was gradually turning the speed of the machine up higher and higher and listening to the sound, and when he had got the speed to about 172, 176 or 180 revolutions per minute, that he asked you if that was about right, and that you said, yes; what are the facts in regard to this? A. It is true that he asked me that question and I did answer yes. But after listening to a few words of the reproduction, and before any one had time to count the speed, at which the machine was running, I said: "that's too slow; the singer never drawled the words out like that." At the time he asked me this question he had just given the adjusting screw a turn upward, and I answered yes almost immediately; in fact, before the machine had time to gain the increased speed due to the turn he had just given the adjusting screw. I thought the turn he had given it would be sufficient to bring it up to a higher speed, but I corrected my mistake almost immediately after making it, and when Mr. Macdonald afterwards tried the machine at a little higher speed, about 195 revolutions, I told him it was still too slow, and he said it was too fast. I had repeatedly tested this record before and knew its correct speed to be 240 revolutions per minute. He refused to try it at any higher speed, and as Mr. Macdonald was making a test I did not interfere.

Q. 5. Mr. Macdonald has testified, substantially, that the highest limit of speed of Type U and Type K electric motor graphophones does not exceed 180 revolutions per minute; and that the Type U, Type K and Type C electric motor graphophones are all three alike or identical so far as their motors and governors are concerned. Is this correct, if not, what are the facts? A. It is true that the Type U, Type K and Type C graphophones are the same so far as their governors, motors, etc., are concerned. But it is not true that the highest limit of their speed is 180 revolutions per minute. I have tested the Type C graphophone with a standard speed indicator several times, and each time for a full minute, and find the speed to be 243 revolutions per minute. I have tested the Type U machine, and find the speed to be 244 revolutions per minute.

Q. 6. Mr. Macdonald has testified, substantially, that the speed of the Type M electric motor phonograph when the governor belt was thrown off or the machine allowed to run away, was and would be extremely irregular, and vary from 200 to 600 or more

revolutions per minute; is this correct, and if not, what are the facts? A. It is not correct. I have made a great many what we call Jumbo Records on this style of machine with the governor belt thrown off, and the machine will run perfectly true and regular when reproducing them in the same way; that is, when the governor belt is thrown off. In fact, it will reproduce as well without the governor as when the governor is used. I found the speed of the machine with the governor belt thrown off 288 revolutions per minute. I have for a number of years run the testing machine in my duplicating room without a governor, by gearing the machine down to the right speed, and it reproduces perfectly true and regular. I have also run all my duplicating machines without a governor by gearing down the machines to run at a proper speed. It is a well known fact that any electric motor will act as a governor for itself and run perfectly true without a governor. In fact it is a governor itself.

Q. 7. What is the purpose or office of a governor on an electric motor or electric motor talking machine? A. To reduce the speed to a lower point than it would naturally run at without the governor.

Q. 8. As I understand you, it would run at a regular and uniform speed at whatever speed the machine might naturally run at without the governor, and the purpose of the governor is really to enable the machine to be set to run at a lower speed than its natural or normal speed. Is this correct? A. That is correct.

Q. 9. Mr. Macdonald has testified, substantially, that the electric motor graphophone will not run at a regular speed when the governor is jammed or tied down, but will vary from 200 to 600 revolutions per minute. Is this correct? A. It is not correct. I have made and reproduced records on the graphophone with the governor tied down, and there is no variation in the speed. It runs perfectly true and regular. I have tested the machines by a standard speed indicator, with the governor tied down, and the speed is 244 revolutions per minute. I tested it a number of times for a full minute.

Q. 10. Mr. Macdonald has testified, substantially, that in the Type U and Type K graphophones, the governor "could not be set back on the shaft on account of the commutator on the machine" for the purpose of making the machine run under the control of the governor at a higher speed. Is this correct, and if not, please state what the facts are? A. It is not correct. To make the machine run at a higher rate of speed, the governor is moved in the opposite direction or away from the commutator. By mov-

ing the governor toward the commutator it would make the machine run at a lower rate of speed. There is nothing in the way to move the governor on the shaft to run the machine at a higher rate of speed. It can be moved about an inch away from the commutator. Mr. Macdonald made a mistake and got it just the reverse, in supposing the governor should be set back towards the commutator to let the machine run at a higher speed. It is exactly the other way.

Q. 11. How is the Type C graphophone in this respect? A. Type U, Type K and Type C are all exactly the same, in this respect.

Q. 12. In any of these three machines, then, the governor can be easily set so as to run the machine and govern it at a higher speed by simply slipping or adjusting the position of the governor further away from the commutator. Is that correct? A. That is correct.

Q. 13. In these machines, how is the governor fixed on the shaft? A. By a set screw that goes through one of the governor collars for the purpose of adjusting it on the shaft.

Q. 14. Mr. Macdonald has testified, substantially, that prior to October 18, 1898, he made two constructions of polyphones, one with three reproducers arranged clover leaf fashion with their styli close together and tracking tandem one after another in the same sound record groove; and the other with two reproducers arranged side by side with their styli close together and tracking tandem one after another in the same sound record groove; and that these two polyphones were made by him by or under Mr. Easton's direction, and that some of your letters to Mr. Easton in regard to making these polyphones were sent to him by Mr. Easton; and Mr. Easton has testified, substantially, that these two polyphones were made by the American Graphophone Company at your request. What are the facts in regard to this? A. Prior to October 18, 1898, I never asked Mr. Easton, Mr. Macdonald, the American Graphophone Company, or any one connected with that company, either directly or indirectly, either orally or in writing, to make any construction of polyphone of any kind. In July, 1898, Mr. Cromelin, of the American Graphophone Company, was at my house and saw and heard one of my polyphones. I told Mr. Easton about this style polyphone in January, 1898. But I did not at that time ask him to make any, nor did he say he was going to make any. I had at that time practically sold it to Mr. Charles Dickinson, though the assignment and patent application was not made until about February 14th, 1898. They made it entirely without any authority or request from me to do so. The first time I heard it was on October 18th, when Mr. Macdonald asked Mr. Easton if he should bring it out and show it to me.

Q. 15. Did you ever request Mr. Easton, Mr. Macdonald or the American Graphophone Company to make any construction of your talking machine invention involving the use of a long record and two or more recorders or reproducers operating simultaneously thereon to record or reproduce the same matter upon or from different portions of the blank at the same time, the recorders or reproducers being at a distance from each other in the direction of the length of the blank, and to which machine you at one time applied the name of "Polyphone." Or did you ever give your consent or authorization to their making such a machine? A. I never asked the American Graphophone Company, or any one connected with it, or gave my consent to the making one of this style of polyphones. I explained this machine to Mr. Easton about in July, 1897. I explained it to Mr. Mauro about November, 1897. I showed one of this style of machines in operation on the commercial or six inch cylinder graphophone to Mr. Easton, Mr. Cromelin and the employes in the record making department of the American Graphophone Company at New York in January, 1898, about the third or fourth. The Graphophone Company tried to make me give up this invention as will be shown by correspondence, already in evidence, written in December, 1897, January, February and March, 1898. I offered to sell it to them because I could not use it myself, the six inch cylinder not being long enough to get enough matter on it, and they would not give me the very little I asked for it. I remember in January, 1898, explaining to Mr. Easton that instead of making a much longer cylinder that the cylinder could be made larger in diameter and correspondingly shorter, so three or more recorders and reproducers could be used.

Q. 16. Mr. Macdonald's preliminary statement refers to certain drawings he pretends to have made about January, 1898, and when Mr. Macdonald was giving his deposition I asked him to produce his said drawings, and he refused to do so, under the instruction of his counsel, on the ground that they showed subject-matter of some other application for patent of Macdonald than the one involved in interference, and when I asked Macdonald to state the length of the blank and the number of recorders and reproducers shown in these drawings he refused to answer this, also, on the same ground. Do you know whether, if these drawings of Macdonald's had been produced, they would show this multiplex recorder or reproducer long blank machine of yours?

(Objected to as immaterial and incompetent.)

A. No. I don't know what Mr. Macdonald's drawings show

which he refused to produce. But I remember having told Mr. Easton in the early part of January that it would be well to make the machine with a larger diameter of blank, and correspondingly shorter. And I have been told that Mr. Macdonald did make a machine of this kind, and I would not be at all surprised if it should be found that these drawings contained my multiplex recorder and reproducer invention.

Counsel for Douglass here states that assuming that Macdonald has given the true ground for refusing to produce these drawings, that they show the subject-matter of some other application of Macdonald's now on file in the Patent Office, that he thinks it would not be improper for the Examiner of Interferences and any other of the sworn officials of the Patent Office to examine this application of Macdonald's to see whether or not it is another instance of an effort to appropriate one of Mr. Douglass' inventions. This suggestion is made without waiving any objection to the testimony of Mr. Macdonald, and is made, further, with the caution that neither Douglass nor his counsel has had any opportunity to rebut this part of Macdonald's case because of his refusal to permit the drawings to be seen, and because he has refused to state the whole truth, though sworn to do so.

Q. 17. Have you any letter referring to or describing this multiplex recorder long record machine to Mr. Easton, or copies of the same, other than those offered in evidence. A. I have a copy of my letter of December 1, 1897, to Mr. Easton, and here produce it.

By consent said letter is here copied into the record, as follows:

"December 1, 1897.

MY DEAR MR. EASTON: I have sent in a rather long official letter to-day in regard to the duplicating matter—fixing up the small plat here, which I trust will meet with your approval, but of course not knowing the situation at the factory, and your plans in this direction—what might seem to be a desirable thing to do from our point of view in the Chicago office, might be entirely undesirable from your point of view, but I suggest what appears to me worth any thing with a hope that some few of the suggestions might be of service, but I of course am naturally always pleased with what they are. I should like to have you see the machine that I told you I was having built when you were here the last time, by increasing the volume of

tone. I really believe this machine is going to become a very important machine in the future of the graphophone business. I applied for a patent on the machine to be called the "Polyphone." How do you like the name? I have no doubt you will understand the meaning of it. The word "Polyphone" means many sounds. I have not had an opportunity to do anything with the machine since the new company started, but I really am quite anxious for you to see it. It not only has a great many arguments in its favor, but really does magnificent work, and never until last week had any records made on the machine, except those that I made myself. Last week I had a man sing a baritone solo on the record with only the one diaphragm working first. I then put on a reproducing diaphragm and a recording diaphragm. While the reproducing diaphragm was repeating the baritone solo, he was singing tenor to his own voice. I then put on two reproducers, and had a perfect duet by one man. The reproduction came out splendid, being of course just twice the volume of tone that we could secure from a single diaphragm. I think we are going to need an expensive machine as well as a cheap one. We have probably now reached almost the lowest mark in the talking machine line as far as prices are concerned. I do not believe we can again work the prices up except by giving people something very much better. For illustration, if a man says what is the difference in reproduction between your \$10 machine and your \$50 machine, we have to say there is none, so far as the reproduction is concerned. The only difference is, the \$50 machine is very much better made. Many people would buy a more expensive machine if the results obtained from this machine were far superior to the cheap machine. If we had the double diaphragm machine, we could say to him, here is a machine that gives you twice as good results as the \$10 machines, or three times as good, as the case may be, whether we use two or three diaphragms. It is human nature for the American people to want the best there is when they can afford it. We could arrange with this machine to have one man sing in four distinct voices, and reproduce them all at the same time. This would really be quite a novelty, and a matter of which one of the Chicago papers wants to write up. I do not want them to as yet, for the reason that I have great confidence in the possibilities of this machine, and any advertising that might be had from the write up on the machine now, would be cold before the time came that it would be of any

service. There are a few slight improvements needed on the machine, such as the matter of adjustment, so the two diaphragms track perfectly. This is really a very simple matter, as I have before stated, I have never had any time to experiment with this recently. It tracks now about five times out of ten. I am sure that with a little experimenting I could make it track every time, and the reproduction come out exactly together. I should like to have you see the machine, and see if you don't think it would be useful and desirable in our business.

With very kindest regards I remain yours very truly,

MGR. L. F. D."

Q. 18. Mr. Macdonald has testified substantially that he showed you his disk machine in 1894, prior to your going to Europe, and that you first showed him your disk machine after you got back from Europe, and told him that you had got it in Switzerland. Is this correct? And if not, what are the facts in this regard? A. It was in the fall of 1894 that I went to Washington to show my disk machine to Mr. Easton. We stayed in Washington about two days, and then went to Atlantic City, New Jersey, where Mr. Easton and I met Mr. Cromelin. We staid at Atlantic City a couple of days and then went to the factory at Bridgeport, Connecticut. When we arrived Mr. Macdonald was working on his disk machine, just completing it. My machine was shown about one hour before Mr. Macdonald's machine was ready. Never knew before that time that he had a disk machine or was working on one. It was the first time I had ever seen his. I went to Europe on March 17, 1894, and returned the latter part of April, 1894. Mr. Cromelin and Mr. Easton met me at the steamer, and on that day or evening I told them about my disk machine idea. I also told them about a spring motor that I was getting from Switzerland. I never told Mr. Macdonald that I got my disk machine in Switzerland, or got the idea of it there. Nor did I tell him that I got the spring motor there.

Q. 19. Mr. Macdonald has testified, substantially, that the Douglass Exhibit, 1897 Sound Record, does not have the appearance or characteristics of being much worn, notwithstanding the fact that it has been used a great many times; in actual use or practice about how many times is it customary to reproduce a record before discarding it as worn out or imperfect, if you know what the practice is in this regard? A. I have had a great deal of experience in wearing out records on nickel in the slot machines, and have worn out thousands of them. Usually a record is worn

out or discarded at from 100 to 150 reproductions. I have also had experience in duplicating, and in that work a record is usually worn out after from 50 to 75 reproductions.

Q. 20. Mr. Easton has testified substantially, that while the machine marked Macdonald's Exhibit, First Graphophone Grand, or parts of it, or the drawings for it, were in course of construction, that Mr. Macdonald mentioned, or very likely mentioned to him the idea of making two, three or more duplicates at a time from the large diameter master record to be made upon the machine. Do you know where this idea of making two, three or more duplicates at a time from a single master came from, or how Mr. Easton and Mr. Macdonald got it?

(Objected to, as immaterial and not in rebuttal.)

A. It was one of my ideas. I told Mr. Easton about it in May, 1898, while he was in Chicago, and I wrote him about it on June 1, 1898. I made a machine of this style and wrote him about it again on July 6, 1898. I have copies of these letters here.

I sent Mr. Easton a machine about the first of July, 1898. The machine I made for them used the ordinary two and a quarter inch blank and record. There were four mandrels on the machine, one holding the master record, the other three holding blank cylinders. There were three reproducing points touching the master record, one in front of the other, and three recorders connected from these reproducers which operated on the three blank cylinders, making three duplicate records at the same time. In my letter of July 6th, I said: "Even now I could build one to make five instead of three duplicates at the same time." It must have been plain to Mr. Macdonald that the way to do this was to make a larger master, because the apparatus, weights, levers and links, took up the entire circle of the small master; and to make more records at the same time and put in the necessary parts to do this, it would be necessary to have a larger diameter surface to work on.

By consent the two letters from Douglass to Easton, or the American Graphophone Company, above referred to and dated June 1, 1898, and July 6th, 1898, are here copied into the record.

(Counsel for Macdonald objects to the opening of a new matter, and claim of invention by Douglass after the proofs for Macdonald are closed, and moves to strike out letters just produced and all testimony relating to the multiplex duplicator.)

Counsel for Douglass points out that the letters and testimony in relation to the multiplex duplicator are strictly in

rebuttal of Mr. Macdonald's testimony or claim of original invention.

Counsel for Macdonald points out that neither Mr. Easton or Mr. Macdonald were asked where the idea of the multiplex duplicating came from, and states that if they had been so asked their answers would have rendered the present testimony as absurd as it is unnecessary.

"June 1, 1898.

Executive office, American Graphophone Co.

GENTLEMEN: My monthly report as to what we have been experimenting on in the last month, would say, that my time has been spent in completing the nickel in the slot machine and case for the Eagle Graphophone, a sample of which machine will be sent to you as soon as we can get the figures from the machine shop here in Chicago, as to what the cost of manufacturing them will be. We have also been working on a duplicating machine for making three duplicates at one time from a single master. This machine is almost completed, and can probably be sent to you within another week; if not too much delayed by the alternating current motor for the graphophone which we are now working on in preference to other work. We also believe that we can send you the alternating motor within a week. We think it will be necessary to make two styles of alternating current motor. We believe there is about five or six different currents, but those that are most used are the 16,000 alternation and the 8,000 alternation; so that if motors are made for these two styles of currents, we believe that they can be used almost any place where they use alternating instead of direct currents for light and power.

I have also spent considerable time this month in experimenting with the old style Painter Wax and the different styles of reproducers and recorders. We have been working on making a combination reproducer and recorder and expect to have one of these completed shortly, as soon as we get some of the other things out of the way and can again take it up. We have also spent some time this month experimenting for the patent lawyers so as to make proof of claims that they want to make in regard to the air process. I also spent considerable time on making the contract for the electric light for the Chicago Office; getting the Chicago Edison and Grossman bidding against each other, and succeeded in completing the contract at a flat rate for the electric current at a less price than we could buy it new to run the engine with. We made

our own current, say nothing of the cost of the installation of the plant, or the cost of the plant, or the cost of renewals of light. The cost of the gas for running the engine would be about \$100 to \$124 per month; the renewal of lights would be about \$25 a month; the cost of running our steam heater would be about \$50 per month; making in all about \$175 to \$200 per month. While under the terms of the contract we burn all the light we wish to on a flat rate of \$175 per month. This price includes the heating of the building.

We have already sent you forward the foot wind for the commercial spring motor machine and the nickel base for the Eagle Graphophone.

JUNE 1, 1898.

Executive Office. (Contd. P. 3.)

Trusting this will be satisfactory, I remain

Yours very truly,

L. F. D."

" JULY 6th, 1898.

Mr. E. D. Easton, Columbia Phonograph Co., 11 Broadway,
New York City.

MY DEAR MR. EASTON: In regard to the Duplicating Machine sent to you yesterday, would say that I had to do the finishing of the machine, because my assistant has gone on his vacation. As he could get a special rate home, he wanted to get off at once—for that reason the small parts were not finished up as I wanted them, as I am not much of a workman, never having used tools enough myself to become proficient. If, however, I have a machinist I can show him what I want, and know when the work is well done. *I wanted the recording arms mounted on center points.*—I also wanted the four pulleys on the mandrels to be sprocket wheels, and run by a sprocket belt. This would not only run them steady, but also make all four work perfectly together. No matter how perfect two wheels may be made, I think it an impossibility for them to be made to run together exactly by the ordinary belt process without the use of a sprocket belt, because the belt may slip a trifle or the wheels may not be exactly the same size. This would be bad for the duplicates, because in running across the master may revolve 400 times and the blank may only run 398, say, owing to the above causes, so both records would

not be exactly alike. This could not happen with the sprocket belt. I also believe records would be less noisy if the recording point was larger in diameter. If the factory would take this matter up, and work in harmony on these things for the good of the cause, they could make these things up in just the shape, they should be as they have so much better facilities for doing the work than I have here in Chicago. As you can see, this machine is made up from pieces of brass. Of course the proper way to make it would be to make a pattern and have castings made. Then it would be much more accurate and substantial than the sample. After the first one is made in this way it is a simple matter to go ahead and make up the perfect machines.

It is much harder to make the finished machines from the start, because often changes are necessary after the work is started. As, for illustration, in the sample machine sent you when it was most completed, I found the mandrels were too close together, so we had to patch the plate that holds them to get them farther apart, as you can see by looking at the machine. I don't know that all this explanation will be of interest to you, but I trust that too much explaining is better than too little. A few words in finishing: would say that I believe that rapid working and labor saving machines are the key to the success of all great enterprises, as in the case of manufacturing watches, sewing machines, etc., etc., the cost of manufacture was much higher before automatic machinery was devised to do the work. I have no doubt that you some time may want to again reduce the price of records, as it will no doubt increase the sales very largely, and the less the cost of manufacture the easier it will be to do this. People, as a rule, do not take kindly to new methods, but its the ones that get out of the old ruts that win in the commercial world. This machine may be only the first step to lead to something better. I may laugh at it in a few years and say what a cumbrous thing that really is, but all thing must have a beginning, and I believe this can be carried on to a much greater extent. Even now I could build one to make five, instead of three duplicates at one time. I let Mr. Lyle listen to some of the records made on the machine. The only thing he said was, you've been looking all over the house to get the best record you could find to make that from, but in reality I took the first record I put my hand on. All three are equally good. There is no reason why they should not be so. If you wish me to

make up some more machines, or this one in just the shape I would like it, you could send it back to me and I will fix it up that way, as my assistant will be back in a few days.

Hoping some good will come of having made the machine, I remain,

Yours very truly."

Q. 21. Mr. Macdonald has, in relation to certain experiments which he pretends to have secretly made when nobody was present, and in which he increased the speed of the ordinary sized blank from 120 revolutions per minute up to a surface speed of 1,800 inches per minute and higher, testified, substantially, to the effect that there was no marked or material increase in the loudness and quality of the record while the speed was being increased up to a surface speed of 1,000 or 1,200 inches per minute, but that the increase in loudness and quality was rapid from this point of 1,000 or 1,200 up to 1,800 inches per minute. Is this correct, and if not what are the facts? A. On the contrary the exactly opposite is correct. I have had prepared a number of records on the five inch cylinders all made under similar conditions and find that the increase in loudness and quality is much more marked up to 1,000 or 1,200 inches per minute than the improvement from 1,200 to a higher, 1,800 or more inches, per minute. One record was made at a speed of seventy-five revolutions per minute, which would be a surface speed of 1,178 inches per minute; another record made at eighty revolutions per minute, which would be a surface speed of 1,256 inches per minute; another at a speed of 100 inches per minute, which would be a surface speed of 1,570 inches per minute; another at 120 revolutions per minute, which would be a surface speed of 1,884 inches per minute. While there is an improvement from the seventy-five revolutions per minute, to the 120 revolutions per minute, it is not near as great an improvement as is found up to 1,178 inches per minute. In fact it is some what difficult to find the improvement between the record made at a surface speed of 1,256 inches per minute, which is eighty revolutions, and the one with a surface speed of 1,884 inches per minute, which is at 120 revolutions per minute.

Q. 22. Do you have, and if so, will you produce the four five inch cylinder records made at 75, 80, 100 and 120 revolutions per minute?

(Objected to as incompetent.)

A. I have and here produce them.

The four five inch diameter records produced by the witness are offered in evidence and marked "Douglass' Exhibit, Grand Record, made at seventy-five revolutions per minute. Douglass Exhibit, Grand Record, made at eighty revolutions per minute. Douglass Exhibit, Grand Record, made at 100 revolutions per minute, and Douglass Exhibit Grand Record Exhibit made at 120 revolutions per minute."

(Objected to as incompetent and not as evidence in rebuttal.)

Q. 23. Mr. Macdonald has testified, substantially, to the effect, or at least endeavored to inferentially make it appear in his testimony, that the circumstance that a record is worn by use does not materially diminish the loudness and quality of the record. What are the facts in this regard?

(Objected to as not proper evidence in rebuttal.)

A. A record that is worn not only loses its volume but also its quality. A record that has been used 100 times is very much diminished in volume and quality, and if used long enough would be entirely obliterated. To show this I have had prepared two records, both made under exactly the same conditions, and at a speed of 120 revolutions per minute, with the old and not with the new recorder. They were so near alike that when I first tested them that you could not tell one from the other. One of them I have had reproduced 100 times on the polyphone, and it plainly shows, as all records do that are worn, that the words are blurred, the volume and quality reduced.

Q. 24. Have you and will you produce the two records mentioned in your last answer?

(Objected to as incompetent and not proper evidence in rebuttal.)

A. I have them and here produce them.

The two records produced by the witness are offered in evidence and marked respectively:

"Douglass' Exhibit Worn Record Made at 120 With Old Recorder."

"Douglass' Exhibit Unworn Record Made at 120 with Old Recorder."

Q. 24. Mr. Easton has testified, substantially, to the effect, that he did not know your financial condition, nor your ability or means financially to undergo the burden and expense of this inter-

ference and that of the four other suits which his company has brought against you, as I believe for the purpose of crushing you financially. What are the facts in this regard?

(Objected to as immaterial.)

A. Mr. Easton, I believe, does know of my financial condition. He knows that since I was nine years old I have had practically the entire expense of a family of six. And since I was married, three years ago, my own family. My father received injuries during the war that made it impossible for him to work at his trade, which was that of millright. His eyes were injured, and he was otherwise disabled so that he could not do any work. Up to the time I was nine years old my mother kept boarders, and at that time I began work. At first I started in by getting up in the morning at half past four, delivering the Lincoln Journal to the trains at Lincoln, Nebraska. I then sold papers on the street until breakfast time; after breakfast I went to school. When I got out at four o'clock in the afternoon I sold evening papers on the streets. In the evening, about seven o'clock until ten, I rang an auction bell in front of an auction store. I kept this up for about three years. When I was ten years old I left school, and during the day-time I sold fruit and peanuts to the offices, and in the summer I sold lemonade, winter carried in coal and passed bills, and other odd jobs. During this time I made about \$5 or \$6 a week, which enabled us to pay our rent, which was only \$5 a month, and live. Occasionally my mother took in sewing, but most of the time she was kept busy with her home work and making dresses for the children. When I was twelve years old I got a position as messenger in the telegraph office at Lincoln, and received ten dollars per month, they allowed me to sell papers in addition to this at the depot when the trains came in at noon. I kept this position until I was thirteen. I then got a position as operator on the switchboard in the telephone office at Lincoln, Nebraska. I staid with the Nebraska Telephone Company eight years. I started in at a salary of \$15 per month, and for one winter worked from ten o'clock at night until seven the next morning. I went to school until noon and slept in the afternoon and evening. After about three months the company raised my salary to \$25 per month. I staid in Lincoln for four years, when I left there I was getting \$35 per month and was seventeen years old. They appointed me to the position of manager at Seward, Nebraska, at \$45 per month. I staid there one year and then went to Grand Island as manager of that office at \$50 per month. I staid there three years. I was also in charge of the office at Kearney, Nebraska. Was then

paid \$60 per month. During all the time I was in the telephone business I did electric work out of hours, and sometimes made as much and more at that as my salary amounted to. In addition to my position as manager at Grand Island and Kearney I also had charge of the City Fire Alarm Department and the Central Nebraska Phonograph Company, for which I received a salary of ten dollars per month from each. About this time my father received a pension of \$8 per month, which he drew until about six months before he died three years ago. His pension was then, about six months before he died, increased to \$18 per month. He only received this a few months until he died. While at Grand Island I made a nickel in the slot attachment for the phonograph and sold the right under the patent for Illinois, Iowa and Nebraska. I got \$500 for this and with it I paid off the mortgage on our furniture and brought the family to Chicago, where I moved in 1890. I then went to work for the Chicago Central Phonograph Company at a salary of \$85 per month. I staid with this company until about November, 1893, with the exception of a few months from March until July, 1892, when I went to Washington for the American Graphophone Company. And while there made arrangement with them for my duplicating process. They were to pay me a royalty of two cents per record. I got out of this contract about seven nickel in the slot graphophones which were worth in cash about \$500 at the time they were delivered, in addition to \$16 in cash. In 1895 the graphophone company wanted to go into the duplicating business more extensively and got me to give up my royalty rights for a license. I made some money from my right to make duplicates, but since these suits were started the graphophone company has attempted to make my license worthless by refusing to sell me blanks, also trying to get the Edison company or the National Phonograph Company to also refuse to sell me blanks. Part of the time my duplicating machines have been idle because I could not get blanks in sufficient quantities, and I only have six duplicating machines. In the fall of 1893 I had made some money out of my slot machine, as I secured a concession at the World's Fair, and I had then saved up about \$2,400, and Mr. Charles Dickinson and myself then formed the Chicago Talking Machine Company, which operated until the first of August, 1897. During this time we put most of the money we made back into the business advertising, and Mr. Easton encouraged me to do this under the promise that we should have the benefit of the returns, as the business improved. Notwithstanding this, he forced our company out of busi-

ness in 1897, and I had, up to that time, made about \$20,000, most of which I gave to my wife in trust for my baby. The past two years my mother has been an invalid and at considerable expense. One of my sisters has been an invalid for six or seven years. At the present time I have two families to provide for, in my mother's, now only three, and in my own there is three. Mr. Easton and I have often talked about this, he has frequently commended me for it. I might add that soon after my father's death, my mother received a pension of \$8 per month, which she is now drawing. I wish also to add that the \$20,000 which I had saved up at the time Mr. Easton had forced my company out of business, was all the money that I had, and most of that has been, as I stated before, placed in trust for my baby, and I have absolutely no control of it.

Q. 25. Did the American Graphophone Company, in either of the suits brought against you, base claim of infringement because of your making a graphophone grand machine which you have testified you made by changing over an ordinary graphophone in the fall or early winter of 1898?

(Objected to as not in rebuttal and as calling for incompetent and secondary evidence.)

A. Yes, I understand one of the suits was brought by the American Graphophone Company to be on that account.

(Counsel for Macdonald renews his objections and waives cross-examination.)

And, thereupon, MR. FRED BABSON, a witness on behalf of contestant Douglass, was produced and being first duly sworn, testifies as follows:

Q. 1. What is your name, age, residence and occupation?

A. Fred Babson; age twenty-two years; I reside in Chicago; my occupation, in the talking machine business.

Q. 2. Have you made any tests to determine at what speed a certain type M phonograph at 107 Madison street, the same being the machine used in certain tests made by Mr. Macdonald on December 7, 1899, will run at under the control of the governor, and, if so, please state what you found the fact to be? A. Yes, I made a test, and found that governing it would run at a speed of 270.

Q. 2. Did you make a similar test with the governor thrown off or disconnected? A. No, I didn't.

Q. 3. Have you made any tests to determine the speed at which electric motor graphophones will run while under the control of the governor and when the governor is disconnected? A. Yes, sir. I made a test and found that with the machine governing, 242, and with the governor tied down, 244 revolutions per minute.

Q. 4. How did you make these tests? A. I held the watch and Mr. Divan held the speed indicator, starting when I said "Go" and stopping when I told him to stop. I watched the speed indicator and made my note. Each test was for one minute, and I made three tests in each case to be sure that they were correct.

Cross-Examination.

C. Q. 1. Do you understand the use of a speed indicator?

A. Yes, sir.

C. Q. 2. Did you ever use one yourself? A. No, sir.

C. Q. 3. What do you mean by a speed indicator? A. An instrument to tell the number of revolutions the shaft is revolving at.

FRED BABSON.

And whereupon MR. CHARLES DIVAN, a witness on behalf of contestant, Douglass, was produced, and, being first duly sworn, testifies as follows:

Q. 1. What is your name, age, residence and occupation? A. Charles Divan; age thirty-three; occupation the talking machine business. I reside in Chicago.

Q. 2. Have you made tests to determine the maximum speed a certain type M electric motor phonograph will run at under the control of its governor, the same being the machine upon which certain tests were made by Mr. Macdonald at 107 Madison street on December 7, 1899, and, if so, state what you found the fact to be? A. Yes, sir, I made such tests, and found that the speed under control of the governor was 270 revolutions per minute. Not governing, 288 revolutions per minute.

Q. 3. Have you also made tests to determine the maximum speed of electric motor graphophones, and, if so, state the results? A. Yes, sir, I made tests on the graphophone, and found that the machine governing ran at 243 revolutions per minute, and with the governor tied down 244 revolutions per minute.

Q. 4. State how you made these tests? A. I made these

tests with the aid of a speed indicator and watch. In taking the speed of the revolving shaft with a speed indicator I started the machine; when it got up to full speed then put the speed indicator onto the shaft, noting the time on the watch when I did so, leaving the speed indicator run for one minute, then noting the number of revolutions indicated on the dial of the speed indicator.

Q. 5. When the governor was disconnected did you note whether the speed was irregular or uniform during the minute as indicated by the movement of the dial finger or hand of the speed indicator? A. Yes, sir, as near as I could judge by the movement of the indicator hand the speed was regular.

(Signed) CHARLES DIVAN.

And thereupon SILAS F. LEACHMAN, a witness on behalf of contestant Douglass, was produced, and being first duly sworn, testifies as follows:

Q. 1. You are the same Silas F. Leachman who has already testified in this suit, are you not? A. Yes, sir.

Q. 2. Have you recently been requested by Mr. Douglass to make four five inch diameter sound records at different speeds, and if so, please state at what number of revolutions per minute, and under what conditions you made them? A. Mr. Douglass requested me to make four five inch in diameter cylinders, loading the same song on each, using the same power for each one, and to speed the machine for the first record at 75, for the second record at 80, for the third record at 100, and for the fourth record at 120, revolutions per minute, which I did.

Q. 3. Please look at the four records marked respectively Douglass' Exhibit Grand Record made at 75 revolutions per minute, 80 revolutions per minute, 100 revolutions per minute, and at 120 revolutions per minute, and state if they are the records which you made for Mr. Douglass, at these different speeds? A. Yes, sir, there is three of them that are marked, but no mark on the 120 one, but that is my record.

Q. 4. Have you reproduced these four records, and if so, please state generally how they compare with each other in loudness and quality? A. I think that they compare favorably excepting the tone of the 120 is, if anything, a cleaner record every way. They all compare favorably. I used the same efforts in each case.

Q. 5. In making these four records at these different speeds,

75, 80, 100 and 120, did you put any announcement or statement on each of the speed at which it had been made. A. I did. There is a statement on each, of the speed at which that record was made.

Q. 6. How does the record made at 75 revolutions per minute, compare in respect to loudness and quality with the ordinary two and a quarter inch record made at 120? A. You mean the large record made at 75 revolutions. There is no comparing.

Q. 7. Do you mean that the large record made at 75 is very much louder and better in quality than the ordinary two and a quarter inch record made at 120? A. Yes, much better.

Q. 8. Did you also make for Mr. Douglass two, two and a quarter inch diameter records at 120 revolutions per minute, using the old style recorder, and if so, state under what conditions you made them? A. Yes, that is one of them, you can identify these by the announcement on them.

Q. 9. What was the announcement you put on these two records made with the old style recorder for Mr. Douglass? A. The Shamrock of Old Ireland, sung by Silas Leachman.

Q. 10. Now, please state under what conditions you made these two records? A. I used the thirty-six inch tin horn and the old style recorder, using a graphophone at a speed of 120.

Q. 11. Did you make them of the same force and power, or differently? A. I got the best results I could get in using the same force I always use.

Q. 12. Please look at the two records marked Douglass' Exhibits Worn Record, made at 120 with old recorder, and unworn record made with old recorder at 120, and state if they are the two records above mentioned? A. You can identify them by the announcement.

Q. 13. Did you also make for Mr. Douglass a record at 120 with the new style of recorder? A. Yes, sir.

Q. 14. Please look at the record I now hand you and state if that is it? A. I can identify this also by the announcement that is on it, and also the chip out of the end of the cylinder.

The record referred to by the witness is offered in evidence and is marked "Douglass' Exhibit Record," made at 120 with new style of recorder.

(Counsel for Macdonald objects to the entire deposition as incompetent, immaterial and not proper evidence in rebuttal.)

Cross-examination waived.

SILAS F. LEACHMAN.

And thereupon HENRY B. BABSON, a witness on behalf of Mr. Douglass, was produced, and testifies as follows:

Q. 1. You are the same Henry B. Babson who has before testified in this case, are you not? A. I am.

Q. 2. Were you present on December 7, 1899, at 107 Madison street when Mr. Macdonald was making a test on a certain Type M phonograph of the Douglass 1897 Sound Record? A. I was present when Mr. Macdonald was testing the record, but I cannot tell the exact date; it was some time in December.

Q. 3. While Mr. Macdonald was making this test, did you hear anything said by Mr. Macdonald or by Mr. Douglass in relation to the speed at which the record was being tested, and if so, state its substance? A. Mr. Douglass stated repeatedly that the machine was not running fast enough. Mr. Macdonald would speed it up a trifle and say that it was running too fast and then speed it down again. At no time when I was there did Mr. Macdonald speed the machine as high as Mr. Douglass said it ought to be speeded.

Q. 4. Have you made any tests of electric motor graphophones to determine at what speeds they would run? A. I tested both the C and the U type graphophones, and found that the C machine would regulate at 244 revolutions per minute and the U machine at 246 revolutions per minute.

Q. 5. By regulate, do you mean the machines would run under the control of the governor at the speeds named? A. I do.

Q. 6. How did you make these tests? A. I tested the speed of the C machine with speed indicator and watch, testing it several times, one minute each time. On the U machine which is one of the slot style, I counted the revolutions of the return shaft, which was 101 per minute, then counted the teeth on the gear wheel, on this shaft, and the number of teeth in the mandrel shaft gear wheel, which were respectively 88 and 36, thus giving the mandrel shaft a speed of 246 or 247 revolutions per minute.

Q. 7. In making the test of the C machine with the speed indicator, did you try it with the governor tied down and notice, by reference to the movement of the hand of the speed indicator, whether the speed was irregular or uniform, while the machine was running without the control of the governor? A. I made no test with the governor tied.

Q. 8. Did you make any tests of the type M electric motor

phonograph, with a speed indicator, and notice whether the speed seemed to be irregular or uniform, when the machine was running without the control of the governor? A. I tested type M phonograph, when it was not under the control of the governor, and it seemed to run very regular.

No cross-examination.

(Signed) HENRY B. BABSON.

The further taking of this testimony is adjourned until to-morrow morning, February 21st, 1900, ten o'clock.

H. M. MUNDAY,
Notary Public.

Chicago, Illinois, Wednesday morning, ten o'clock, February 21st, 1900, met pursuant to adjournment. Present as before.

And thereupon W. N. DENNISON, a witness produced on behalf of Douglass, being first duly sworn, testifies as follows:

Q. 1. What is your name, age, residence and occupation? A. My name is Wilburn Norris Dennison; twenty-six years of age; I reside in Elgin, Illinois; I am a model maker by occupation.

Q. 2. Are you familiar with the construction and operation of electric motors, such for example as are used in phonographs and graphophones? A. I am.

Q. 3. Please state whether or not an ordinary electric motor, phonograph or graphophone will run at substantially uniform rate of speed without the aid of a governor?

(Objected to as incompetent, the witness not having been qualified as an expert.)

A. A phonograph electric motor will run at a uniform speed without the aid of a governor. That is to say it will run at its normal speed. The normal speed may be 200 revolutions per minute or it may be 400 revolutions per minute. But if the speed was 400 revolutions the motor would not run any slower or faster if the quantity of current was not cut down or reduced.

Q. 4. Would the speed remain uniform if there were several of the motors on the line and these motors were cut out or in? A. The motors would all run at a uniform rate of speed if they were connected up in parallel.

Q. 5. And the speed would not change although the number of motors in parallel should be changed? A. The speed of the motors would not change.

Q. 6. Please state what experience you have had tending to familiarize you with the operation of electric motors? A. The experience that I have had is in building models for electric phonographs at Mr. Edison's laboratory. Also in experimenting with motors for other uses. I have been employed in Mr. Edison's laboratory between three and a half and four years on this kind of work.

Q. 7. What is the purpose or use of the governor on the electric phonograph? A. The use of the governor on an electric phonograph is to reduce the normal speed of the motor to any speed that is required for the work.

Q. 8. In other words it is to enable the machine to be set at a lower speed than the normal or natural speed of the electric motor. Is that correct? A. Yes, and have it govern then.

Q. 9. Please look at the patent No. 628,544, granted July 11, 1899, to C. H. Macdonald on machine for making graphophone recording stiles or sapphires, and state if you understand the construction and operation of the invention forming the subject of that patent?

(Objected to as irrelevant and immaterial.)

A. I thoroughly understand the construction of this patent. It is exactly the same thing as Mr. Frank Capps explained to me and showed me in September, 1898; and he also told me that he showed this machine and process to Mr. Macdonald. Mr. Capps had at that time in operation a machine of the same construction, with the exception of round holes in the steel disk, and this machine was used for grinding round sapphire balls.

(The answer is further objected to as hearsay, insofar as it purports to give alleged statements of Mr. Capp, and incompetent so far as it purports to give the witness' opinion as to similarities between two things, one of which is not in evidence.)

Q. 10. Mr. Capp, as I understand you, showed you two machines like that shown in this patent, one being exactly like the patent, and having the slots in the steel disk to make the recording cylinders, and the other having round holes in the steel disk for making balls or reproducing points. Is that correct?

(Same objection, and also objected to as leading.)

A. That is correct.

Q. 12. State when he first showed you these machines and where they were?

(Objected to as immaterial and irrelevant.)

A. Mr. Capps first showed me these machines in September, 1898, at 64 Market street, Newark, New Jersey.

Q. 13. When was it that Mr. Capps told you that he had showed these machines to Mr. Macdonald, and how did he come to so tell you?

(Same objection, and also as calling for hearsay.)

A. Mr. Capps first told me of showing these machines to Mr. Macdonald in September of 1898. And the reason he told me of this is because of my close acquaintance with him and that I was thoroughly familiar with the grinding of sapphire at Mr. Edison's laboratory, having designed and built machines for work similar to this.

Q. 14. State, if you know, why Mr. Capps showed these machines to Mr. Macdonald?

(Same objection.)

A. Mr. Capps showed these machines to Mr. Macdonald, expecting to get a large contract for making reproducing and recording points.

Q. 15. State, if you know, how long Mr. Capps had these machines, or had been making sapphire talking machine points by their aid, prior to the time when you first saw them?

(Same objection, and also as calling on its face for matter not within the knowledge of the witness.)

A. I first received some of these points at Mr. Edison's laboratory in May or June of 1898 from Mr. Capps.

Q. 16. How do you know, or what reason, if any, have you to believe that the points which you received from Mr. Capps were made on these machines?

(Objected to as incompetent, irrelevant and immaterial.)

A. These points that I received at Mr. Edison's laboratory in May or June, 1898, were exactly the same as those Mr. Capps showed me in September of 1898, made by this process.

Q. 17. State, if you know, who is the inventor of these machines Mr. Capps showed you in September, 1898?

(Same objection.)

A. To the best of my knowledge Mr. Capps is the inventor of them.

Counsel for Douglass here offers in evidence a copy of the Macdonald patent 628,544 referred to by the witness, and the same to be marked "Douglass' Exhibit Sapphire Patent."

(Same objection.)

(Counsel for Macdonald objects to the testimony with reference to the Macdonald Sapphire patent and invention as not rebuttal and as an attempt to substitute for the issue of priority in this case a question of priority in another case between different parties.)

Cross-Examination by Mr. Mauro.

C. Q. 1. Is the speed of an ungoverned electric motor affected by fluctuations in power? A. The speed of ungoverned electric motor is not affected by fluctuations of the power if the battery is not run below the voltage that the motor is designed to run at.

C. Q. 2. In other words, if the power is always in excess of that required to drive the motor at its maximum speed, fluctuations in the power would not affect it. Is that your meaning? A. That is the meaning I had. Unless the amount of current was much in excess.

C. Q. 3. How many cells of battery, such as ordinarily used for the purpose, are required to drive a phonograph electric motor at its maximum speed? A. One cell, if that cell is fully charged, and it will drive a phonograph electric motor at its normal speed—from two and six-tenths volts to two volts.

C. Q. 4. Suppose the battery power be insufficient to drive the motor at its maximum speed, what would be the effect upon the speed of the motor of fluctuations in the power? A. The speed of the motor would be slower than its maximum speed, and would gradually reduce its speed until the battery was exhausted.

C. Q. 5. Would not the speed of the motor fluctuate up and down with variations in the power? A. A storage battery does not fluctuate in its power, so it can't fluctuate the speed of the motor.

C. Q. 6. By "uniform speed" do you mean that for a period of say a minute, the speed would be continuously uniform, or that in each minute the motor shaft would make the same number of revolutions? A. The motor would run within two or three revolutions per minute of an even speed.

C. Q. 7. Is the speed of an ungoverned electric motor affected by variations in the work or resistance? A. The speed of an ungoverned motor will not be affected by the work if there is power enough there to drive it.

C. Q. 8. If on a type M phonograph a single cell battery were used to drive the instrument during the reproduction of a sound-record, and it were found that the phonograph would not run at anything like its maximum speed, would that indicate to your mind that the cell was nearly exhausted? A. It would indicate to me that the cell was nearly exhausted if I were sure that the machine was in perfect working condition.

Counsel for Macdonald requests counsel for Douglass to admit for the purposes of evidence in this case that at both tests

of the Douglass Exhibit 1897, Sound-Record, viz: that on December 5th, and that on December 7, 1899, Mr. Douglass found it necessary in order to develop the speed desired at those tests to add additional battery power to that with which the machine was supplied for its normal working.

Counsel for Douglass in reply states, that the particular Type M phonograph used in making the tests, did have two batteries connected with it at the time the tests were made.

Re-direct.

R. D. Q. 1. I forgot to ask you on the direct, this question: Please state, if you know, what is the exact diameter of the ordinary Edison phonograph blanks as turned out for the market. A. The phonograph blanks as turned out by the Edison Company should be two inches and three-sixteenths in diameter. But some are turned down smaller than that on account of defects in the surface of the blank.

R. D. Q. 2. Then if a blank is turned out by the Edison factory of less diameter than two and three-sixteenths inches it is an exception to the rule, and because of some defect appearing on the surface of the material when the blank is turned down to the standard size. Is that correct? A. That is correct.

W. N. DENNISON.

Counsel for Douglass here offers in evidence a copy of the T. H. Macdonald Patent 621,834 of March 28, 1899, on "Coin-Controlled Graphophones," and the same is marked "Douglass' Exhibit Eagle Slot Machine."

(Objected to as irrelevant, immaterial and not in rebuttal).

STATE OF ILLINOIS, }
COUNTY OF COOK. } ss.

I, H. M. Munday, a notary public within and for the county of Cook and State of Illinois, do hereby certify that the foregoing depositions of Leon F. Douglass, Fred. Babson, Charles Divan, Silas F. Leachman, Henry R. Babson and W. H. Dennison, were taken on behalf of Leon F. Douglass by consent, before me at the office of Munday, Evarts & Adcock, suite No. 906 Marquette building, No. 207 Dearborn street, in the city of Chicago, in said county, on the 20th and 21st days of February, an adjournment being taken from said 20th to said 21st day, and concluded on said 21st day of February; that each of said witnesses were by me duly sworn before the commencement of his testimony; that the testimony of said witnesses was written out by myself; that the opposing party, Macdonald, and his assignee, the American Graphophone Company, was represented by his and its counsel, Mr. Philip Mauro, Esq., during the taking of said testimony; that said testimony was taken at said suite No. 906, and was commenced on the 20th day of February, at 10 o'clock in the forenoon and continued to February 21st, and was concluded at noon on said 21st day of February, 1900; that I am not connected by blood or marriage with either of the parties to said cause, nor interested directly or indirectly in the matter in controversy.

In testimony whereof, I have hereunto set my hand and affixed my notarial seal, this 21st day of February, 1900.

[SEAL.]

H. M. MUNDAY, *Notary Public.*